<110> Nagaike, Kazuhiro
       Mori, Yasuko
       Gomi, Yasuyuki
       Takahashi, Michiaki
       Kouichi, Yamanishi

<120> Recombinant varicella-zoster virus

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<141> 2009-05-19

<150> PCT/JP2005/003652
<151> 2005-03-05

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<170> PatentIn version 3.2

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<223>  The 'Xaa' at location 99 stands for Thr, or Met.

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acacgtttta agtactgttg gaactccctc accaaccgca aycgcaatcc tttgaaggct      180

gcgagagcgt ttggaaaact cgggtacgtc taaattcacc ccagycgcg atg gat acg      237
                                                        Met Asp Thr
                                                          1

ccg ccg atg cag cgc tct aca ccc caa cgc gcg ggg tcg cct gat act       285
Pro Pro Met Gln Arg Ser Thr Pro Gln Arg Ala Gly Ser Pro Asp Thr
  5                  10                 15

ttg gag tta atg gac ctg ttg gac gcg gcc gcc gcg gcc gcc gaa cac       333
Leu Glu Leu Met Asp Leu Leu Asp Ala Ala Ala Ala Ala Ala Glu His
20                  25                 30                 35

agg gcc cgg gtg gtc acc tcg agt cag cct gac gat cta cta ttt gga       381
Arg Ala Arg Val Val Thr Ser Ser Gln Pro Asp Asp Leu Leu Phe Gly
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                    40                        45                          50

gag aac ggg gtc atg gtg gga cgg gaa cat gag atc gtt tca att ccc      429
Glu Asn Gly Val Met Val Gly Arg Glu His Glu Ile Val Ser Ile Pro
            55                  60                      65

tcc gta tcg gga ctt caa cca gaa ccc aga acg gaa gat gtt ggc gaa      477
Ser Val Ser Gly Leu Gln Pro Glu Pro Arg Thr Glu Asp Val Gly Glu
            70                  75                      80

gag cta aca caa gac gac tac gta tgc gag gac ggt cag gat cta ayg      525
Glu Leu Thr Gln Asp Asp Tyr Val Cys Glu Asp Gly Gln Asp Leu Xaa
            85                  90                      95

ggc tcg cct gta atc ccg ctg gcc gag gtc ttc cac acc cga ttc tcg      573
Gly Ser Pro Val Ile Pro Leu Ala Glu Val Phe His Thr Arg Phe Ser
100                 105                     110                     115

gag gcc ggc gcg cga gaa cca aca gga gcc gat cgc tcc ctc gag aca      621
Glu Ala Gly Ala Arg Glu Pro Thr Gly Ala Asp Arg Ser Leu Glu Thr
            120                 125                     130

gtc tct ctc gga acg aag ctt gct agg tct cca aaa cca ccg atg aac      669
Val Ser Leu Gly Thr Lys Leu Ala Arg Ser Pro Lys Pro Pro Met Asn
            135                 140                     145

gat ggg gaa acg ggc aga ggt acg acc cct ccg ttc ccg cag gcc ttc      717
Asp Gly Glu Thr Gly Arg Gly Thr Thr Pro Pro Phe Pro Gln Ala Phe
            150                 155                     160

tcc cct gta tcc ccc gcg tct cct gtt gga gac gcc gcc ggg aac gat      765
Ser Pro Val Ser Pro Ala Ser Pro Val Gly Asp Ala Ala Gly Asn Asp
            165                 170                     175

caa cgg gaa gac cag cgg tct ata ccc cga caa acg acg aga gga aat      813
Gln Arg Glu Asp Gln Arg Ser Ile Pro Arg Gln Thr Thr Arg Gly Asn
180                 185                     190                     195

tca cca ggt ttg ccg tcg gtg gtc cat cga gac aga caa act cag tcc      861
Ser Pro Gly Leu Pro Ser Val Val His Arg Asp Arg Gln Thr Gln Ser
            200                 205                     210

atc tcg ggt aaa aag ccg ggc gat gag caa gcg ggt cat gcg cat gca      909
Ile Ser Gly Lys Lys Pro Gly Asp Glu Gln Ala Gly His Ala His Ala
            215                 220                     225

tcg ggg gac gga gta gtt ctc cag aaa act caa cgg ccc gct cag gga      957
Ser Gly Asp Gly Val Val Leu Gln Lys Thr Gln Arg Pro Ala Gln Gly
            230                 235                     240

aag agc ccg aag aaa aag act ttg aag gtt aag gtc cca ctc ccg gcg     1005
Lys Ser Pro Lys Lys Lys Thr Leu Lys Val Lys Val Pro Leu Pro Ala
            245                 250                     255

cgg aaa ccc ggt gga cct gta ccc ggc ccg gtt gag caa ttg tac cac     1053
Arg Lys Pro Gly Gly Pro Val Pro Gly Pro Val Glu Gln Leu Tyr His
260                 265                     270                     275

gtc ctt tcg gac agc gtt ccc gct aag ggg gca aag gcg gac ctg ccg     1101
Val Leu Ser Asp Ser Val Pro Ala Lys Gly Ala Lys Ala Asp Leu Pro
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ttt gag acc gat gat acc cgc cca agg aaa cat gat gcc cgg ggt ata      1149
Phe Glu Thr Asp Asp Thr Arg Pro Arg Lys His Asp Ala Arg Gly Ile
        295                    300                    305

aca cct cgc gtc cct gga cgt tcg tcg ggg ggc aaa cct aga gcg ttt      1197
Thr Pro Arg Val Pro Gly Arg Ser Ser Gly Gly Lys Pro Arg Ala Phe
        310                    315                    320

ttg gcc ctg ccg gga aga tcc cac gca cca gac ccg att gag gat gac      1245
Leu Ala Leu Pro Gly Arg Ser His Ala Pro Asp Pro Ile Glu Asp Asp
        325                    330                    335

agc ccg gtg gag aaa aag cca aag agt cgt gag ttt gtt tcg tct tca      1293
Ser Pro Val Glu Lys Lys Pro Lys Ser Arg Glu Phe Val Ser Ser Ser
340                    345                    350                    355

tcc tct tcc tcg tcg tgg gga tcg tca tcg gag gat gaa gac gat gaa      1341
Ser Ser Ser Ser Ser Trp Gly Ser Ser Ser Glu Asp Glu Asp Asp Glu
                        360                    365                    370

ccc cgg cgc gtt tcg gtg gga agt gaa act aca ggc agc agg tcc gga      1389
Pro Arg Arg Val Ser Val Gly Ser Glu Thr Thr Gly Ser Arg Ser Gly
                    375                    380                    385

cgc gaa cac gcc cct tcc ccg tca aat tcg gat gat tcg gac tca aat      1437
Arg Glu His Ala Pro Ser Pro Ser Asn Ser Asp Asp Ser Asp Ser Asn
                    390                    395                    400

gat ggt ggg tcg acg aaa caa aat atc caa ccg gga tat cga tcc atc      1485
Asp Gly Gly Ser Thr Lys Gln Asn Ile Gln Pro Gly Tyr Arg Ser Ile
        405                    410                    415

agc ggt ccc gat ccg agg att cgt aag acc aaa cgt ctt gcg ggg gaa      1533
Ser Gly Pro Asp Pro Arg Ile Arg Lys Thr Lys Arg Leu Ala Gly Glu
420                    425                    430                    435

ccg ggg cgc cag aga cag aaa tca ttt tcc ctg ccg cga tcc aga acc      1581
Pro Gly Arg Gln Arg Gln Lys Ser Phe Ser Leu Pro Arg Ser Arg Thr
                    440                    445                    450

ccg ata att ccc ccg gtg tcg ggg ccg ctc atg atg ccc gac gga agc      1629
Pro Ile Ile Pro Pro Val Ser Gly Pro Leu Met Met Pro Asp Gly Ser
                    455                    460                    465

cct tgg ccc gga tcg gcg ccc ctc cca tcc aac agg gtg cgg ttt gga      1677
Pro Trp Pro Gly Ser Ala Pro Leu Pro Ser Asn Arg Val Arg Phe Gly
                    470                    475                    480

ccg tcc ggg gag acc aga gag ggt cac tgg gag gat gag gct gtg aga      1725
Pro Ser Gly Glu Thr Arg Glu Gly His Trp Glu Asp Glu Ala Val Arg
        485                    490                    495

gcg gcg cgg gct cgt tac gag gcc tca act gaa ccc gyg ccg ctt tac      1773
Ala Ala Arg Ala Arg Tyr Glu Ala Ser Thr Glu Pro Xaa Pro Leu Tyr
500                    505                    510                    515

gtg ccg gag ttg gga gat ccg gct aga cag tac cgc gcg ctg att aac      1821
Val Pro Glu Leu Gly Asp Pro Ala Arg Gln Tyr Arg Ala Leu Ile Asn
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520   525   530

ctg atc tac tgt cca gac aga gac cct ata gca tgg ctc cag aac ccc   1869
Leu Ile Tyr Cys Pro Asp Arg Asp Pro Ile Ala Trp Leu Gln Asn Pro
                535   540   545

aag ctg acc ggt gtc aac tcg gcc ctg aac cag ttc tac caa aag ctg   1917
Lys Leu Thr Gly Val Asn Ser Ala Leu Asn Gln Phe Tyr Gln Lys Leu
                550   555   560

ttg cca ccg gga cgg gcg ggt acc gcc gtt acg ggg agc gta gcg tct   1965
Leu Pro Pro Gly Arg Ala Gly Thr Ala Val Thr Gly Ser Val Ala Ser
                565   570   575

ccc gtt ccg cat gta ggc gaa gcc atg gcc acg ggg gag gcc ctc tgg   2013
Pro Val Pro His Val Gly Glu Ala Met Ala Thr Gly Glu Ala Leu Trp
580   585   590   595

gct ctc ccc cac gcg gcc gcg gcc gtg gct atg agc cgt cgg tac gac   2061
Ala Leu Pro His Ala Ala Ala Ala Val Ala Met Ser Arg Arg Tyr Asp
                        600   605   610

cgg gcc caa aaa cac ttt atc cta cag agt ctc cgc aga gcc ttt gcc   2109
Arg Ala Gln Lys His Phe Ile Leu Gln Ser Leu Arg Arg Ala Phe Ala
                        615   620   625

ggc atg gca tac ccc gag gca acg ggc tcc agt ccg gcg gcg cgg atc   2157
Gly Met Ala Tyr Pro Glu Ala Thr Gly Ser Ser Pro Ala Ala Arg Ile
                630   635   640

tcc cgc ggt cac cct tct cca aca acc ccg gcc aca cag act ccc gac   2205
Ser Arg Gly His Pro Ser Pro Thr Thr Pro Ala Thr Gln Thr Pro Asp
                645   650   655

cct cag ccg tcg gcc gcc gcg cgc tct ctt tct gtg tgt cca ccg gat   2253
Pro Gln Pro Ser Ala Ala Ala Arg Ser Leu Ser Val Cys Pro Pro Asp
660   665   670   675

gat cgt tta cga act ccg cgc aag cgc aag tcc cag cca gtc gag agc   2301
Asp Arg Leu Arg Thr Pro Arg Lys Arg Lys Ser Gln Pro Val Glu Ser
                        680   685   690

aga agc ctc ctc gac aag att agg gag aca ccc gtc gcg gac gcc cgg   2349
Arg Ser Leu Leu Asp Lys Ile Arg Glu Thr Pro Val Ala Asp Ala Arg
                        695   700   705

gtt gca gac gat cat gtg gtt tcc aag gcc aag agg cgg gta tcc gag   2397
Val Ala Asp Asp His Val Val Ser Lys Ala Lys Arg Arg Val Ser Glu
                710   715   720

ccc gtg acc atc acc tcg ggc cct gtg gtg gat ccc ccc gcc gta ata   2445
Pro Val Thr Ile Thr Ser Gly Pro Val Val Asp Pro Pro Ala Val Ile
                725   730   735

acg atg cca ctt gac gga ccg gcc cca aac ggg gga ttt cgg cgt att   2493
Thr Met Pro Leu Asp Gly Pro Ala Pro Asn Gly Gly Phe Arg Arg Ile
740   745   750   755

ccc cgg ggg gcc ctg cat acc ccg gtc ccg tcg gac cag gct cgc aag   2541
Pro Arg Gly Ala Leu His Thr Pro Val Pro Ser Asp Gln Ala Arg Lys

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gcg tac tgt acc ccc gaa acc atc gcc cgt ctg gtc gac gac cca ttg        2589
Ala Tyr Cys Thr Pro Glu Thr Ile Ala Arg Leu Val Asp Asp Pro Leu
        775                          780                      785

ttt ccc acg gcc tgg cgc cct gcg cta agc ttt gat ccc ggc gcc ttg        2637
Phe Pro Thr Ala Trp Arg Pro Ala Leu Ser Phe Asp Pro Gly Ala Leu
        790                          795                      800

gcg gaa atc gcc gct cgg cgt ccg ggc gga gga gac cga cgg ttt ggt        2685
Ala Glu Ile Ala Ala Arg Arg Pro Gly Gly Gly Asp Arg Arg Phe Gly
        805                      810                      815

cca ccc agc gga gtg gag gcg ctg cga cgg agg tgc gcc tgg atg cgg        2733
Pro Pro Ser Gly Val Glu Ala Leu Arg Arg Arg Cys Ala Trp Met Arg
820                          825                      830                      835

cag atc cca gac ccg gag gat gtg agg ctt ctg atc atc tac gat ccg        2781
Gln Ile Pro Asp Pro Glu Asp Val Arg Leu Leu Ile Ile Tyr Asp Pro
            840                          845                      850

ttg ccc gga gag gac atc aac ggc ccc ctc gag agc acc ctc gcg aca        2829
Leu Pro Gly Glu Asp Ile Asn Gly Pro Leu Glu Ser Thr Leu Ala Thr
                855                          860                      865

gat ccg gga ccg tca tgg agt cca tcc cga ggg gga ctg tct gtg gtc        2877
Asp Pro Gly Pro Ser Trp Ser Pro Ser Arg Gly Gly Leu Ser Val Val
            870                          875                      880

ctg gca gcc ctg agt aac cgg ttg tgc ctg ccg agc act cat gcc tgg        2925
Leu Ala Ala Leu Ser Asn Arg Leu Cys Leu Pro Ser Thr His Ala Trp
    885                          890                      895

gcc ggg aac tgg acc ggc ccg ccg gac gtg tcc gct ttg aac gcc cgg        2973
Ala Gly Asn Trp Thr Gly Pro Pro Asp Val Ser Ala Leu Asn Ala Arg
900                          905                      910                      915

ggc gtt tta tta ctg tcg acc cga gac ctg gcc ttt gcc ggg gcc gtc        3021
Gly Val Leu Leu Leu Ser Thr Arg Asp Leu Ala Phe Ala Gly Ala Val
                920                          925                      930

gag tat cta ggc tcg cgg ttg gcc tct gcc cgg cgc cgg ttg ctg gtg        3069
Glu Tyr Leu Gly Ser Arg Leu Ala Ser Ala Arg Arg Arg Leu Leu Val
                935                          940                      945

ttg gac gcg gtg gcc ctc gag agg tgg ccc ggg gat gga ccc gct ttg        3117
Leu Asp Ala Val Ala Leu Glu Arg Trp Pro Gly Asp Gly Pro Ala Leu
            950                          955                      960

tct cag tat cac gtg tac gtc cgg gcc ccg gcg cga ccg gac gcc cag        3165
Ser Gln Tyr His Val Tyr Val Arg Ala Pro Ala Arg Pro Asp Ala Gln
        965                          970                      975

gcc gtc gtc cga tgg cca gac tcg gcg gtc aca gaa gga ctc gcc cgg        3213
Ala Val Val Arg Trp Pro Asp Ser Ala Val Thr Glu Gly Leu Ala Arg
980                          985                      990                      995

gcc gtg ttt gca tcg  tcg cgc acc ttt ggg  cca gcg agt ttt gct         3258
Ala Val Phe Ala Ser  Ser Arg Thr Phe Gly  Pro Ala Ser Phe Ala
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          1000                    1005                    1010

cgt atc gag act gcg   ttt gcc aac ctg tac   ccg ggc gaa caa ccc        3303
Arg Ile Glu Thr Ala   Phe Ala Asn Leu Tyr   Pro Gly Glu Gln Pro
             1015                   1020                   1025

ctg tgt ttg tgc cgc   ggt ggg aac gtc gca   tac acc gtg tgt acc        3348
Leu Cys Leu Cys Arg   Gly Gly Asn Val Ala   Tyr Thr Val Cys Thr
             1030                   1035                   1040

cgc gcg ggc ccc aag   acc cgc gtc ccc ctg   tcg ccc cgt gaa tac        3393
Arg Ala Gly Pro Lys   Thr Arg Val Pro Leu   Ser Pro Arg Glu Tyr
             1045                   1050                   1055

cgg cag tac gtg ctg   ccg ggt ttt gac ggt   tgc aag gac ctc gcg        3438
Arg Gln Tyr Val Leu   Pro Gly Phe Asp Gly   Cys Lys Asp Leu Ala
             1060                   1065                   1070

cga cag tct cgg ggt   ctg ggg ctc ggg gca   gcc gac ttt gtg gac        3483
Arg Gln Ser Arg Gly   Leu Gly Leu Gly Ala   Ala Asp Phe Val Asp
             1075                   1080                   1085

gag gcg gca cat agc   cac cgc gca gca aac   cga tgg ggc ctg ggt        3528
Glu Ala Ala His Ser   His Arg Ala Ala Asn   Arg Trp Gly Leu Gly
             1090                   1095                   1100

gcc gcg ctt cga ccc   gtc ttc ctt ccc gag   gga cgg aga ccg ggg        3573
Ala Ala Leu Arg Pro   Val Phe Leu Pro Glu   Gly Arg Arg Pro Gly
             1105                   1110                   1115

gcc gcc ggg ccg gag   gcc ggc gac gta ccc   acc tgg gcg agg gtg        3618
Ala Ala Gly Pro Glu   Ala Gly Asp Val Pro   Thr Trp Ala Arg Val
             1120                   1125                   1130

ttt tgc cgc cac gcc   ctg ctg gaa ccc gac   cct gcc gcg gaa cca        3663
Phe Cys Arg His Ala   Leu Leu Glu Pro Asp   Pro Ala Ala Glu Pro
             1135                   1140                   1145

ctc gtg ctt cca ccc   gtg gcc ggt cgg tcg   gtg gcg ctg tat gcg        3708
Leu Val Leu Pro Pro   Val Ala Gly Arg Ser   Val Ala Leu Tyr Ala
             1150                   1155                   1160

tcg gcg gac gag gct   cgg aat gcc ctc ccc   ccg att ccc aga gta        3753
Ser Ala Asp Glu Ala   Arg Asn Ala Leu Pro   Pro Ile Pro Arg Val
             1165                   1170                   1175

atg tgg ccg ccc ggt   ttt ggg gcc gcg gag   acg gtg ttg gag ggg        3798
Met Trp Pro Pro Gly   Phe Gly Ala Ala Glu   Thr Val Leu Glu Gly
             1180                   1185                   1190

agc gac gga aca cgg   ttc gcg ttc gga cac   cac ggg ggc tcg gaa        3843
Ser Asp Gly Thr Arg   Phe Ala Phe Gly His   His Gly Gly Ser Glu
             1195                   1200                   1205

cgg ccg gca gaa acc   cag gcg ggg cga cag   cgg cgc acc gca gac        3888
Arg Pro Ala Glu Thr   Gln Ala Gly Arg Gln   Arg Arg Thr Ala Asp
             1210                   1215                   1220

gac aga gaa cac gct   ttg gag ccg gac gat   tgg gag gtg ggg tgt        3933
Asp Arg Glu His Ala   Leu Glu Pro Asp Asp   Trp Glu Val Gly Cys
```

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              1225                    1230                      1235

gaa gac gcg tgg gac    agc gag gag ggg ggc    ggg gac gac ggg gac           3978
Glu Asp Ala Trp Asp    Ser Glu Glu Gly Gly    Gly Asp Asp Gly Asp
              1240                   1245                      1250

gca ccg ggg tca tcc    ttt ggg gtg agc gtc    gtg tcg gtg gcc ccg           4023
Ala Pro Gly Ser Ser    Phe Gly Val Ser Val    Val Ser Val Ala Pro
              1255                   1260                      1265

ggt gtg ctg cga gac    cgc cgg gtg ggc tyg    cgc ccg gcg gtc aag           4068
Gly Val Leu Arg Asp    Arg Arg Val Gly Xaa    Arg Pro Ala Val Lys
              1270                   1275                      1280

gtg gag ctg ttg tcc    tcg tcc tcg tcc tcc    gag gac gag gac gat           4113
Val Glu Leu Leu Ser    Ser Ser Ser Ser Ser    Glu Asp Glu Asp Asp
              1285                   1290                      1295

gtg tgg gga ggg cgc    ggg ggg agg agc ccc    ccg cag agt cgg ggg           4158
Val Trp Gly Gly Arg    Gly Gly Arg Ser Pro    Pro Gln Ser Arg Gly
              1300                   1305                      1310

tgacggagtc ccctcctttt ctcgtgagcg ccacyggcgc gcggactgtt tgttgtttgt           4218

taataaaa                                                                    4226


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<223>  The 'Xaa' at location 99 stands for Thr, or Met.

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<223>  The 'Xaa' at location 512 stands for Ala, or Val.

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Met Asp Thr Pro Pro Met Gln Arg Ser Thr Pro Gln Arg Ala Gly Ser
1               5                   10                  15


Pro Asp Thr Leu Glu Leu Met Asp Leu Leu Asp Ala Ala Ala Ala Ala
            20                  25                  30


Ala Glu His Arg Ala Arg Val Val Thr Ser Ser Gln Pro Asp Asp Leu
        35                  40                  45
```

Leu Phe Gly Glu Asn Gly Val Met Val Gly Arg Glu His Glu Ile Val
    50   55   60

Ser Ile Pro Ser Val Ser Gly Leu Gln Pro Glu Pro Arg Thr Glu Asp
65   70   75   80

Val Gly Glu Glu Leu Thr Gln Asp Asp Tyr Val Cys Glu Asp Gly Gln
                85   90   95

Asp Leu Xaa Gly Ser Pro Val Ile Pro Leu Ala Glu Val Phe His Thr
            100   105   110

Arg Phe Ser Glu Ala Gly Ala Arg Glu Pro Thr Gly Ala Asp Arg Ser
            115   120   125

Leu Glu Thr Val Ser Leu Gly Thr Lys Leu Ala Arg Ser Pro Lys Pro
    130   135   140

Pro Met Asn Asp Gly Glu Thr Gly Arg Gly Thr Thr Pro Pro Phe Pro
145   150   155   160

Gln Ala Phe Ser Pro Val Ser Pro Ala Ser Pro Val Gly Asp Ala Ala
            165   170   175

Gly Asn Asp Gln Arg Glu Asp Gln Arg Ser Ile Pro Arg Gln Thr Thr
            180   185   190

Arg Gly Asn Ser Pro Gly Leu Pro Ser Val Val His Arg Asp Arg Gln
            195   200   205

Thr Gln Ser Ile Ser Gly Lys Lys Pro Gly Asp Glu Gln Ala Gly His
    210   215   220

Ala His Ala Ser Gly Asp Gly Val Val Leu Gln Lys Thr Gln Arg Pro
225   230   235   240

Ala Gln Gly Lys Ser Pro Lys Lys Lys Thr Leu Lys Val Lys Val Pro
            245   250   255

Leu Pro Ala Arg Lys Pro Gly Gly Pro Val Pro Gly Pro Val Glu Gln
            260   265   270

Leu Tyr His Val Leu Ser Asp Ser Val Pro Ala Lys Gly Ala Lys Ala
    275   280   285

Asp Leu Pro Phe Glu Thr Asp Asp Thr Arg Pro Arg Lys His Asp Ala
    290   295   300

Arg Gly Ile Thr Pro Arg Val Pro Gly Arg Ser Ser Gly Gly Lys Pro
305   310   315   320

Arg Ala Phe Leu Ala Leu Pro Gly Arg Ser His Ala Pro Asp Pro Ile
                325   330   335

Glu Asp Asp Ser Pro Val Glu Lys Lys Pro Lys Ser Arg Glu Phe Val
            340   345   350

Ser Ser Ser Ser Ser Ser Ser Ser Trp Gly Ser Ser Ser Glu Asp Glu
        355   360   365

Asp Asp Glu Pro Arg Arg Val Ser Val Gly Ser Glu Thr Thr Gly Ser
    370   375   380

Arg Ser Gly Arg Glu His Ala Pro Ser Pro Ser Asn Ser Asp Asp Ser
385   390   395   400

Asp Ser Asn Asp Gly Gly Ser Thr Lys Gln Asn Ile Gln Pro Gly Tyr
                405   410   415

Arg Ser Ile Ser Gly Pro Asp Pro Arg Ile Arg Lys Thr Lys Arg Leu
                420   425   430

Ala Gly Glu Pro Gly Arg Gln Arg Gln Lys Ser Phe Ser Leu Pro Arg
            435   440   445

Ser Arg Thr Pro Ile Ile Pro Pro Val Ser Gly Pro Leu Met Met Pro
    450   455   460

Asp Gly Ser Pro Trp Pro Gly Ser Ala Pro Leu Pro Ser Asn Arg Val
465   470   475   480

Arg Phe Gly Pro Ser Gly Glu Thr Arg Glu Gly His Trp Glu Asp Glu
                485   490   495

Ala Val Arg Ala Ala Arg Ala Arg Tyr Glu Ala Ser Thr Glu Pro Xaa
            500   505   510

Pro Leu Tyr Val Pro Glu Leu Gly Asp Pro Ala Arg Gln Tyr Arg Ala
            515   520   525

Leu Ile Asn Leu Ile Tyr Cys Pro Asp Arg Asp Pro Ile Ala Trp Leu
530   535   540

Gln Asn Pro Lys Leu Thr Gly Val Asn Ser Ala Leu Asn Gln Phe Tyr
545   550   555   560

Gln Lys Leu Leu Pro Pro Gly Arg Ala Gly Thr Ala Val Thr Gly Ser
                565   570   575

Val Ala Ser Pro Val Pro His Val Gly Glu Ala Met Ala Thr Gly Glu
            580   585   590

Ala Leu Trp Ala Leu Pro His Ala Ala Ala Ala Val Ala Met Ser Arg
        595   600   605

Arg Tyr Asp Arg Ala Gln Lys His Phe Ile Leu Gln Ser Leu Arg Arg
    610   615   620

Ala Phe Ala Gly Met Ala Tyr Pro Glu Ala Thr Gly Ser Ser Pro Ala
625   630   635   640

Ala Arg Ile Ser Arg Gly His Pro Ser Pro Thr Thr Pro Ala Thr Gln
            645   650   655

Thr Pro Asp Pro Gln Pro Ser Ala Ala Ala Arg Ser Leu Ser Val Cys
        660   665   670

Pro Pro Asp Asp Arg Leu Arg Thr Pro Arg Lys Arg Lys Ser Gln Pro
        675   680   685

Val Glu Ser Arg Ser Leu Leu Asp Lys Ile Arg Glu Thr Pro Val Ala
690   695   700

Asp Ala Arg Val Ala Asp Asp His Val Val Ser Lys Ala Lys Arg Arg
705   710   715   720

Val Ser Glu Pro Val Thr Ile Thr Ser Gly Pro Val Val Asp Pro Pro
            725   730   735

Ala Val Ile Thr Met Pro Leu Asp Gly Pro Ala Pro Asn Gly Gly Phe
            740   745   750

Arg Arg Ile Pro Arg Gly Ala Leu His Thr Pro Val Pro Ser Asp Gln
        755   760   765

Ala Arg Lys Ala Tyr Cys Thr Pro Glu Thr Ile Ala Arg Leu Val Asp
    770   775   780

Asp Pro Leu Phe Pro Thr Ala Trp Arg Pro Ala Leu Ser Phe Asp Pro
785   790   795   800

Gly Ala Leu Ala Glu Ile Ala Ala Arg Arg Pro Gly Gly Gly Asp Arg
                805   810   815

Arg Phe Gly Pro Pro Ser Gly Val Glu Ala Leu Arg Arg Arg Cys Ala
            820   825   830

Trp Met Arg Gln Ile Pro Asp Pro Glu Asp Val Arg Leu Leu Ile Ile
            835   840   845

Tyr Asp Pro Leu Pro Gly Glu Asp Ile Asn Gly Pro Leu Glu Ser Thr
    850   855   860

Leu Ala Thr Asp Pro Gly Pro Ser Trp Ser Pro Ser Arg Gly Gly Leu
865   870   875   880

Ser Val Val Leu Ala Ala Leu Ser Asn Arg Leu Cys Leu Pro Ser Thr
                885   890   895

His Ala Trp Ala Gly Asn Trp Thr Gly Pro Pro Asp Val Ser Ala Leu
            900   905   910

Asn Ala Arg Gly Val Leu Leu Leu Ser Thr Arg Asp Leu Ala Phe Ala
            915   920   925

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   35                  40                  45

act gta gac ctg cca ggc gga gga acg tta cac att acc tgt acc aaa        1328
Thr Val Asp Leu Pro Gly Gly Gly Thr Leu His Ile Thr Cys Thr Lys
50                  55                  60                  65

acc tat gta att att ggc aaa tat agc aaa ccc ggc gaa cgt ctt agc        1376
Thr Tyr Val Ile Ile Gly Lys Tyr Ser Lys Pro Gly Glu Arg Leu Ser
                70                  75                  80

ctt gcc cgt cta ata ggg cgt gca atg acg cct gga ggt gca agg aca        1424
Leu Ala Arg Leu Ile Gly Arg Ala Met Thr Pro Gly Gly Ala Arg Thr
            85                  90                  95

ttt att att ttg gcg atg aag gaa aag cga tcc aca acg ctt ggg tat        1472
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Phe Ile Ile Leu Ala Met Lys Glu Lys Arg Ser Thr Thr Leu Gly Tyr
    100                 105                 110

gaa tgt ggt acg ggc ttg cat tta ctg gct cca tct atg ggt aca ttt    1520
Glu Cys Gly Thr Gly Leu His Leu Leu Ala Pro Ser Met Gly Thr Phe
    115                 120                 125

ctc cgc aca cac ggt tta agt aac aga gat ctc tgt tta tgg cgg ggt    1568
Leu Arg Thr His Gly Leu Ser Asn Arg Asp Leu Cys Leu Trp Arg Gly
130                 135                 140                 145

aat att tat gat atg cat atg caa cgt ctt atg ttt tgg gag aat atc    1616
Asn Ile Tyr Asp Met His Met Gln Arg Leu Met Phe Trp Glu Asn Ile
                150                 155                 160

gcg caa aat acc act gaa aca cct tgt ata acg tcg acg tta aca tgc    1664
Ala Gln Asn Thr Thr Glu Thr Pro Cys Ile Thr Ser Thr Leu Thr Cys
                165                 170                 175

aac ttg aca gaa gac tct ggt gaa gcc gca ctt acc acg tca gac cga    1712
Asn Leu Thr Glu Asp Ser Gly Glu Ala Ala Leu Thr Thr Ser Asp Arg
        180                 185                 190

ccc act ctc cca acc cta aca gcc caa gga aga cca aca gtt tcc aac    1760
Pro Thr Leu Pro Thr Leu Thr Ala Gln Gly Arg Pro Thr Val Ser Asn
    195                 200                 205

att cgt gga ata ttg aaa gga tcc ccc cgt caa cag ccg gtc tgt cac    1808
Ile Arg Gly Ile Leu Lys Gly Ser Pro Arg Gln Gln Pro Val Cys His
210                 215                 220                 225

cgg gtt aga ttt gcc gaa cct acg gag ggc gta ttg atg taa           1850
Arg Val Arg Phe Ala Glu Pro Thr Glu Gly Val Leu Met
                230                 235

tcactaaata aaatacacct ttttcgatt gtacgtattt ttatttaaat gtgtagttca    1910

tagtccgccg acagccgctc gggctttcc cccacataca acatgatcgt atgcctgga     1970

tgcaccggtc caacactccg ccgagaaggg ggatttacaa tgacagtgat acccaatagc    2030

cgccagatgt acaccagct gtccggactc cagcatcatc tgctgagttg cggcgctgaa     2090

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                                          Met Gln Thr Val Cys Ala
                                          240

agc tta tgt gga tat gct cga ata cca act gaa gag cca tct tat gaa   8672
Ser Leu Cys Gly Tyr Ala Arg Ile Pro Thr Glu Glu Pro Ser Tyr Glu
245   250   255   260

gag gtg cgt gta aac acg cac ccc caa gga gcc gcc ctg ctc cgc ctc   8720
Glu Val Arg Val Asn Thr His Pro Gln Gly Ala Ala Leu Leu Arg Leu
                265   270   275

caa gag gct tta acc gct gtg aat gga tta ttg cct gca cct cta acg   8768
Gln Glu Ala Leu Thr Ala Val Asn Gly Leu Leu Pro Ala Pro Leu Thr
            280   285   290

tta gaa gac gta gtc gct tct gca gat aat acc cgt cgt ttg gtc cgc   8816
Leu Glu Asp Val Val Ala Ser Ala Asp Asn Thr Arg Arg Leu Val Arg
                295   300   305

gcc cag gct ttg gcg cga act tac gct gca tgt tct cgt aac att gaa   8864
Ala Gln Ala Leu Ala Arg Thr Tyr Ala Ala Cys Ser Arg Asn Ile Glu
        310   315   320

tgt tta aaa cag cac cat ttt act gaa gat aac ccc ggt ctt aac gcc   8912
Cys Leu Lys Gln His His Phe Thr Glu Asp Asn Pro Gly Leu Asn Ala
325   330   335   340

gtg gtc cgt tca cac atg gaa aac tca aaa cgg ctt gct gat atg tgt   8960
Val Val Arg Ser His Met Glu Asn Ser Lys Arg Leu Ala Asp Met Cys
                345   350   355

tta gct gca att acc cat ttg tat tta tcg gtt ggc gcg gtg gat gtt   9008
Leu Ala Ala Ile Thr His Leu Tyr Leu Ser Val Gly Ala Val Asp Val
            360   365   370

act acg gat gat att gtc gat caa acc ctg aga atg acc gct gaa agt   9056
Thr Thr Asp Asp Ile Val Asp Gln Thr Leu Arg Met Thr Ala Glu Ser
        375   380   385

gaa gtg gtc atg tct gat gtt gtt ctt ttg gag aaa act ctt ggg gtc   9104

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Glu Val Val Met Ser Asp Val Val Leu Leu Glu Lys Thr Leu Gly Val
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gtt gct aaa cct cag gca tcg ttt gat gtt tcc cac aac cat gaa tta          9152
Val Ala Lys Pro Gln Ala Ser Phe Asp Val Ser His Asn His Glu Leu
   405                 410                 415                 420

tct ata gct aaa ggg gaa aat gtg ggt tta aaa aca tca cct att aaa          9200
Ser Ile Ala Lys Gly Glu Asn Val Gly Leu Lys Thr Ser Pro Ile Lys
                   425                 430                 435

tcg gag gcg aca caa tta tct gaa att aaa ccc cca ctt ata gaa gta          9248
Ser Glu Ala Thr Gln Leu Ser Glu Ile Lys Pro Pro Leu Ile Glu Val
                   440                 445                 450

tcg gat aat aac aca tct aac cta aca aaa aaa acg tat ccg aca gaa          9296
Ser Asp Asn Asn Thr Ser Asn Leu Thr Lys Lys Thr Tyr Pro Thr Glu
                   455                 460                 465

act ctt cag ccc gtg ttg acc cca aaa cag acg caa gat gta caa cgc          9344
Thr Leu Gln Pro Val Leu Thr Pro Lys Gln Thr Gln Asp Val Gln Arg
   470                 475                 480

aca acc ccc gcg atc aag aaa tcc cat gtt atg ctt gta taa               9386
Thr Thr Pro Ala Ile Lys Lys Ser His Val Met Leu Val
   485                 490                 495

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                                                                    Met

gga tca att acc gct tcg ttc ata tta ata acg atg caa att tta ttt   10692
Gly Ser Ile Thr Ala Ser Phe Ile Leu Ile Thr Met Gln Ile Leu Phe
    500   505   510

ttt tgt gaa gac agc agt ggg gag cca aac ttt gca gaa cgg aat ttt   10740
Phe Cys Glu Asp Ser Ser Gly Glu Pro Asn Phe Ala Glu Arg Asn Phe
515   520   525   530

tgg cat gcc agc tgt tcg gct cgt gga gtt tat atc gac gga tca atg   10788
Trp His Ala Ser Cys Ser Ala Arg Gly Val Tyr Ile Asp Gly Ser Met
                535   540   545

atc acc acc ctt ttc ttc tac gca tcc ctt ttg ggg gtg tgt gta gcc   10836
Ile Thr Thr Leu Phe Phe Tyr Ala Ser Leu Leu Gly Val Cys Val Ala
            550   555   560

ctt att tcg tta gct tat cat gcg tgt ttc cgg tta ttt act cgt tct   10884
Leu Ile Ser Leu Ala Tyr His Ala Cys Phe Arg Leu Phe Thr Arg Ser
        565   570   575

gta tta cgc agc acg tgg taaacccgtt tgcctataaa aggggcaggc   10932
Val Leu Arg Ser Thr Trp
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gtgtataaga gggcccctgt ttaatacgcg gtctgccgtg tttggatatt tcacgaccct   10992

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              Met Ala Ser Ser Asp Gly Asp Arg Leu Cys Arg Ser
              585   590   595

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Asn Ala Val Arg Arg Lys Thr Thr Pro Ser Tyr Ser Gly Gln Tyr Arg
        600   605   610

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Thr Ala Arg Arg Ser Val Val Val Gly Pro Pro Asp Asp Ser Asp Asp
        615   620   625

tcg ttg ggt tac att acc aca gtt ggg gcc gat tct cct tct cca gtg   11188
Ser Leu Gly Tyr Ile Thr Thr Val Gly Ala Asp Ser Pro Ser Pro Val
    630   635   640

tac gcg gat ctt tat ttt gaa cat aaa aat acg acc cct cgc gta cat   11236
Tyr Ala Asp Leu Tyr Phe Glu His Lys Asn Thr Thr Pro Arg Val His
645   650   655   660

caa cca aac gac tcc agc gga tcg gaa gat gac ttt gaa gac atc gat   11284
Gln Pro Asn Asp Ser Ser Gly Ser Glu Asp Asp Phe Glu Asp Ile Asp
            665   670   675

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Glu Val Val Ala Ala Phe Arg Glu Ala Arg Leu Arg His Glu Leu Val
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Glu Asp Ala Val Tyr Glu Asn Pro Leu Ser Val Glu Lys Pro Ser Arg
        695             700                 705

tct ttt act aaa aat gcg gcg gtt aaa cct aaa tta gag gat tca ccg          11428
Ser Phe Thr Lys Asn Ala Ala Val Lys Pro Lys Leu Glu Asp Ser Pro
    710             715             720

aag cga gct ccc ccg gga gca ggc gca att gcc agc ggg aga cca att          11476
Lys Arg Ala Pro Pro Gly Ala Gly Ala Ile Ala Ser Gly Arg Pro Ile
725             730             735                 740

tcc ttc agc act gca cca aaa acc gca aca agc tcg tgg tgc ggt cct          11524
Ser Phe Ser Thr Ala Pro Lys Thr Ala Thr Ser Ser Trp Cys Gly Pro
            745             750                 755

acg cca tca tat aac aaa cgc gtc ttt tgt gaa gcg gtc cgg cgc gta          11572
Thr Pro Ser Tyr Asn Lys Arg Val Phe Cys Glu Ala Val Arg Arg Val
            760             765                 770

gcc gcc atg cag gca caa aag gct gcc gaa gcg gct tgg aat agt aat          11620
Ala Ala Met Gln Ala Gln Lys Ala Ala Glu Ala Ala Trp Asn Ser Asn
            775             780             785

ccc cca agg aat aac gcc gaa tta gac cgt ttg tta acc gga gcc gtt          11668
Pro Pro Arg Asn Asn Ala Glu Leu Asp Arg Leu Leu Thr Gly Ala Val
790             795             800

att cgt att acg gtg cat gag ggt tta aat tta ata caa gcc gct aat          11716
Ile Arg Ile Thr Val His Glu Gly Leu Asn Leu Ile Gln Ala Ala Asn
805             810             815                 820

gaa gca gac cta ggt gaa gga gca tcg gta tcc aaa cgt gga cat aat          11764
Glu Ala Asp Leu Gly Glu Gly Ala Ser Val Ser Lys Arg Gly His Asn
            825             830                 835

cga aaa act gga gat tta cag ggg ggc atg ggt aat gaa cct atg tac          11812
Arg Lys Thr Gly Asp Leu Gln Gly Gly Met Gly Asn Glu Pro Met Tyr
            840             845                 850

gca caa gtt cgt aag cca aaa agt cga acg gat aca caa acg act ggg          11860
Ala Gln Val Arg Lys Pro Lys Ser Arg Thr Asp Thr Gln Thr Thr Gly
        855             860             865

cgt ata act aat cga agt agg gcc cgt tct gca tca aga act gat acg          11908
Arg Ile Thr Asn Arg Ser Arg Ala Arg Ser Ala Ser Arg Thr Asp Thr
    870             875             880

cga aaa tag ggatataatt acgcagtaac ggtttacccg gtattatgta                  11957
Arg Lys
885

taataaataa acgtataaaa gacagtcgtg gtttgtgttt attataaatg tgtattatat        12017

gtcacatatt ataaactgtt taaatagtac cacgtggtat tatgaacagt ttataatcag        12077
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ttgctaccaa acaaacccca ttagacggcg ggttttgata aagggaatcg cttatttaaa   12137

ctaaagattt tactctataa gt atg gag tgt aat tta gga acc gaa cat cct   12189
                         Met Glu Cys Asn Leu Gly Thr Glu His Pro
                                             890   895

agt aca gat acg tgg aat cgt agt aaa acg gaa caa gcg gtt gtg gac   12237
Ser Thr Asp Thr Trp Asn Arg Ser Lys Thr Glu Gln Ala Val Val Asp
            900   905   910

gca ttt gat gaa tcg ttg ttt ggt gat gta gca tcg gat att gga ttt   12285
Ala Phe Asp Glu Ser Leu Phe Gly Asp Val Ala Ser Asp Ile Gly Phe
        915   920   925

gaa acg tcg tta tat tca cat gca gtt aaa act gct ccg tct ccg cct   12333
Glu Thr Ser Leu Tyr Ser His Ala Val Lys Thr Ala Pro Ser Pro Pro
        930   935   940

tgg gta gct agc cct aaa att tta tat caa cag tta ata cgg gat ctt   12381
Trp Val Ala Ser Pro Lys Ile Leu Tyr Gln Gln Leu Ile Arg Asp Leu
945   950   955   960

gat ttt tca gaa ggg ccg cgt tta cta tca tgt ctt gaa acc tgg aac   12429
Asp Phe Ser Glu Gly Pro Arg Leu Leu Ser Cys Leu Glu Thr Trp Asn
                    965   970   975

gag gat tta ttc tca tgt ttt cct att aat gag gac cta tat tcc gat   12477
Glu Asp Leu Phe Ser Cys Phe Pro Ile Asn Glu Asp Leu Tyr Ser Asp
                980   985   990

atg atg gtt tta tcc ccg gat cca gat gac gtt atc tca acc gtt tca   12525
Met Met Val Leu Ser Pro Asp Pro Asp Asp Val Ile Ser Thr Val Ser
            995   1000   1005

acc aaa gac cat gtt gaa atg ttt aat tta aca acc cgg ggt tcc   12570
Thr Lys Asp His Val Glu Met Phe Asn Leu Thr Thr Arg Gly Ser
   1010   1015   1020

gtt cga ttg cct agt cca cca aag caa ccg acg ggg ctt cca gct   12615
Val Arg Leu Pro Ser Pro Pro Lys Gln Pro Thr Gly Leu Pro Ala
   1025   1030   1035

tac gtt cag gag gtc cag gat tcg ttt acc gta gaa cta cgc gcc   12660
Tyr Val Gln Glu Val Gln Asp Ser Phe Thr Val Glu Leu Arg Ala
   1040   1045   1050

cgg gaa gaa gca tac aca aaa cta cta gtt act tat tgt aaa tcg   12705
Arg Glu Glu Ala Tyr Thr Lys Leu Leu Val Thr Tyr Cys Lys Ser
   1055   1060   1065

att ata cgt tat ctc caa gga acg gcg aaa agg acg aca ata ggt   12750
Ile Ile Arg Tyr Leu Gln Gly Thr Ala Lys Arg Thr Thr Ile Gly
   1070   1075   1080

ctt aat ata caa aac cct gac cag aaa gct tac acg caa ctc agg   12795
Leu Asn Ile Gln Asn Pro Asp Gln Lys Ala Tyr Thr Gln Leu Arg
   1085   1090   1095

caa agt att cta ctt aga tat tat cgt gag gtg gca agt ttg gcg   12840

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Gln Ser  Ile Leu Leu Arg Tyr  Tyr Arg Glu Val Ala  Ser Leu Ala
    1100                      1105              1110

cgt ctt  ctg tac cta cat tta  tat tta acc gta acg  cgt gaa ttt      12885
Arg Leu  Leu Tyr Leu His Leu  Tyr Leu Thr Val Thr  Arg Glu Phe
    1115                      1120              1125

tcc tgg  cgt ttg tac gcc agt  caa tct gca cac ccg  gac gtg ttt      12930
Ser Trp  Arg Leu Tyr Ala Ser  Gln Ser Ala His Pro  Asp Val Phe
    1130                      1135              1140

gcg gct  tta aaa ttc acc tgg  acc gaa cgt cga cag  ttc acg tgt      12975
Ala Ala  Leu Lys Phe Thr Trp  Thr Glu Arg Arg Gln  Phe Thr Cys
    1145                      1150              1155

gcg ttt  cat cct gta tta tgc  aac cac ggc att gtg  tta tta gaa      13020
Ala Phe  His Pro Val Leu Cys  Asn His Gly Ile Val  Leu Leu Glu
    1160                      1165              1170

ggg aaa  cca cta aca gcg tct  gcc ttg agg gaa ata  aat tac cgc      13065
Gly Lys  Pro Leu Thr Ala Ser  Ala Leu Arg Glu Ile  Asn Tyr Arg
    1175                      1180              1185

cgc cga  gaa ctg gga ctg cct  cta gtt aga tgt ggt  ctt gtt gaa      13110
Arg Arg  Glu Leu Gly Leu Pro  Leu Val Arg Cys Gly  Leu Val Glu
    1190                      1195              1200

gaa aac  aaa tct ccg ttg gtt  caa caa ccc tca ttt  tcg gtt cat      13155
Glu Asn  Lys Ser Pro Leu Val  Gln Gln Pro Ser Phe  Ser Val His
    1205                      1210              1215

tta cca  cgg tcg gtg ggt ttt  ctt acc cac cac att  aag cgt aag      13200
Leu Pro  Arg Ser Val Gly Phe  Leu Thr His His Ile  Lys Arg Lys
    1220                      1225              1230

tta gac  gca tat gcg gtc aaa  cat cct caa gaa ccg  aga cat gta      13245
Leu Asp  Ala Tyr Ala Val Lys  His Pro Gln Glu Pro  Arg His Val
    1235                      1240              1245

cga gcg  gat cat cct tac gca  aaa gtt gtt gaa aat  aga aac tac      13290
Arg Ala  Asp His Pro Tyr Ala  Lys Val Val Glu Asn  Arg Asn Tyr
    1250                      1255              1260

ggt agt  agc atc gaa gct atg  att tta gca cct ccg  tcc cca tcc      13335
Gly Ser  Ser Ile Glu Ala Met  Ile Leu Ala Pro Pro  Ser Pro Ser
    1265                      1270              1275

gag atc  ctg ccg ggg gac cca  cca cgc cca ccc acg  tgt ggg ttt      13380
Glu Ile  Leu Pro Gly Asp Pro  Pro Arg Pro Pro Thr  Cys Gly Phe
    1280                      1285              1290

tta acg  cgt taa acgtcattgg ggtagagggt gtaaataaat tacgaaaacg         13432
Leu Thr  Arg
    1295

tgcatgcgtt ttttattttt acaatgcgcc gtatatggta tgtctgtcat gtgctctaaa   13492

gtcccatata taaaagaagc cccaacgagt gtatgcgtat tgcgtaccgc gaccctggga   13552

tgttttacag gcgcgtttgt ttgtctcggt tataagt atg cag tcg ggt  cat tat  13607
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Met Gln Ser Gly His Tyr
                                        1300

aac cgg agg   caa tcc cgc cga cag   cgg ata tcg tct aat   acc aca   13652
Asn Arg Arg   Gln Ser Arg Arg Gln   Arg Ile Ser Ser Asn   Thr Thr
        1305   1310   1315

gac tcc ccc   cgt cac aca cac gga   aca cgt tat cgg tca   acc aat   13697
Asp Ser Pro   Arg His Thr His Gly   Thr Arg Tyr Arg Ser   Thr Asn
        1320   1325   1330

tgg tat aca   cac cca ccc cag ata   ttg tcc aat tca gaa   aca tta   13742
Trp Tyr Thr   His Pro Pro Gln Ile   Leu Ser Asn Ser Glu   Thr Leu
        1335   1340   1345

gtt gcg gtt   caa gaa cta ctg aac   tcc gag atg gat cag   gac agc   13787
Val Ala Val   Gln Glu Leu Leu Asn   Ser Glu Met Asp Gln   Asp Ser
        1350   1355   1360

agt tct gac   gca tcg gat gat ttt   ccg gga tac gcc tta   cat cat   13832
Ser Ser Asp   Ala Ser Asp Asp Phe   Pro Gly Tyr Ala Leu   His His
        1365   1370   1375

tct aca tat   aat gga tcc gaa caa   aat aca tca act tcc   aga cat   13877
Ser Thr Tyr   Asn Gly Ser Glu Gln   Asn Thr Ser Thr Ser   Arg His
        1380   1385   1390

gaa aat cgc   ata ttt aaa tta acg   gag agg gaa gct aat   gag gaa   13922
Glu Asn Arg   Ile Phe Lys Leu Thr   Glu Arg Glu Ala Asn   Glu Glu
        1395   1400   1405

atc aac atc   aat acg gac gcg atc   gac gac gag gga gag   gcg gag   13967
Ile Asn Ile   Asn Thr Asp Ala Ile   Asp Asp Glu Gly Glu   Ala Glu
        1410   1415   1420

gag gga gag   gcg gag gag gac gcg   atc gac gac gag gga   gag gcg   14012
Glu Gly Glu   Ala Glu Glu Asp Ala   Ile Asp Asp Glu Gly   Glu Ala
        1425   1430   1435

gag gag gga   gag gcg gag gag gac   gcg att gac gac gag   gga gag   14057
Glu Glu Gly   Glu Ala Glu Glu Asp   Ala Ile Asp Asp Glu   Gly Glu
        1440   1445   1450

gcg gag gag   gga gag gcg gag gag   gac gcg att gac gac   gag gga   14102
Ala Glu Glu   Gly Glu Ala Glu Glu   Asp Ala Ile Asp Asp   Glu Gly
        1455   1460   1465

gag gcg gag   gag gga gag gcg gag   gag gga gag gcg gag   gag gga   14147
Glu Ala Glu   Glu Gly Glu Ala Glu   Glu Gly Glu Ala Glu   Glu Gly
        1470   1475   1480

gag gcg gag   gag gac gcg atc gac   gac gag gga gag gcg   gag gag   14192
Glu Ala Glu   Glu Asp Ala Ile Asp   Asp Glu Gly Glu Ala   Glu Glu
        1485   1490   1495

gac gcg gcg   gag gag gac gcg atc   gac gac gag gga gag   gcg gag   14237
Asp Ala Ala   Glu Glu Asp Ala Ile   Asp Asp Glu Gly Glu   Ala Glu
        1500   1505   1510

gag gat tat   ttt tct gta agt caa   gtt tgc agt cga gac   gcg gat   14282

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Glu Asp Tyr   Phe Ser Val Ser Gln   Val Cys Ser Arg Asp   Ala Asp
      1515                    1520                    1525

gag gtt tat   ttt acg tta gac ccg   gaa ata agt tac agt   acc gat         14327
Glu Val Tyr   Phe Thr Leu Asp Pro   Glu Ile Ser Tyr Ser   Thr Asp
      1530                    1535                    1540

ctt cgc att   gca aag gtt atg gag   cct gcg gta tca aag   gaa ctt         14372
Leu Arg Ile   Ala Lys Val Met Glu   Pro Ala Val Ser Lys   Glu Leu
      1545                    1550                    1555

aat gta tca   aaa cgt tgt gtt gaa   cct gtt acc cta aca   ggc tct         14417
Asn Val Ser   Lys Arg Cys Val Glu   Pro Val Thr Leu Thr   Gly Ser
      1560                    1565                    1570

atg tta gcg   cat aat ggg ttt gat   gag tcc tgg ttt gct   atg cgc         14462
Met Leu Ala   His Asn Gly Phe Asp   Glu Ser Trp Phe Ala   Met Arg
      1575                    1580                    1585

gaa tgt acc   cgt cgc gaa tat att   acg gtc caa gga tta   tac gac         14507
Glu Cys Thr   Arg Arg Glu Tyr Ile   Thr Val Gln Gly Leu   Tyr Asp
      1590                    1595                    1600

cca att cat   tta cgg tat cag ttt   gat act tcc cgg atg   aca ccc         14552
Pro Ile His   Leu Arg Tyr Gln Phe   Asp Thr Ser Arg Met   Thr Pro
      1605                    1610                    1615

cca cag att   ttg aga act ata cca   gcc ctt cct aac atg   aca ctt         14597
Pro Gln Ile   Leu Arg Thr Ile Pro   Ala Leu Pro Asn Met   Thr Leu
      1620                    1625                    1630

ggt gaa ctt   tta ttg att ttt cct   att gaa ttt atg gcc   cag cca         14642
Gly Glu Leu   Leu Leu Ile Phe Pro   Ile Glu Phe Met Ala   Gln Pro
      1635                    1640                    1645

att tct ata   gaa cgt att tta gtt   gaa gat gta ttt tta   gat agg         14687
Ile Ser Ile   Glu Arg Ile Leu Val   Glu Asp Val Phe Leu   Asp Arg
      1650                    1655                    1660

cgg gct tcc   agt aaa aca cat aaa   tac ggc ccg cgt tgg   aat tcc         14732
Arg Ala Ser   Ser Lys Thr His Lys   Tyr Gly Pro Arg Trp   Asn Ser
      1665                    1670                    1675

gtc tac gca   ctt cca tat aat gcg   ggt aaa atg tat gta   caa cac         14777
Val Tyr Ala   Leu Pro Tyr Asn Ala   Gly Lys Met Tyr Val   Gln His
      1680                    1685                    1690

att cct ggg   ttt tat gac gtg tcc   tta cgt gct gtg ggc   caa gga         14822
Ile Pro Gly   Phe Tyr Asp Val Ser   Leu Arg Ala Val Gly   Gln Gly
      1695                    1700                    1705

acg gcc att   tgg cat cac atg ata   tta tcc aca gca gca   tgc gct         14867
Thr Ala Ile   Trp His His Met Ile   Leu Ser Thr Ala Ala   Cys Ala
      1710                    1715                    1720

att tct aat   cgc att tca cat gga   gat gga tta gga ttt   ttg tta         14912
Ile Ser Asn   Arg Ile Ser His Gly   Asp Gly Leu Gly Phe   Leu Leu
      1725                    1730                    1735

gac gcg gca   att cgt att agc gca   aac tgt att ttt ttg   gga cgt         14957
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Asp Ala Ala   Ile Arg Ile Ser Ala   Asn Cys Ile Phe Leu   Gly Arg
    1740                  1745                  1750

aac gat aat   ttt ggc gtg ggg gat   cca tgt tgg tta gaa   gac cat        15002
Asn Asp Asn   Phe Gly Val Gly Asp   Pro Cys Trp Leu Glu   Asp His
    1755                  1760                  1765

ctt gcc gga   tta cca cga gaa gcc   gta ccc gac gta ctc   caa gtg        15047
Leu Ala Gly   Leu Pro Arg Glu Ala   Val Pro Asp Val Leu   Gln Val
    1770                  1775                  1780

aca cag ttg   gtt ttg cca aat cgg   ggt cca acg gtt gcc   att atg        15092
Thr Gln Leu   Val Leu Pro Asn Arg   Gly Pro Thr Val Ala   Ile Met
    1785                  1790                  1795

cgt ggt ttt   ttt ggg gcg ttg gca   tat tgg ccc gaa cta   aga att        15137
Arg Gly Phe   Phe Gly Ala Leu Ala   Tyr Trp Pro Glu Leu   Arg Ile
    1800                  1805                  1810

gct ata agt   gaa cca tct aca tct   ttg gtg cga tat gct   acc ggt        15182
Ala Ile Ser   Glu Pro Ser Thr Ser   Leu Val Arg Tyr Ala   Thr Gly
    1815                  1820                  1825

cac atg gaa   ctt gcc gaa tgg ttt   tta ttt tca cgt aca   cat agt        15227
His Met Glu   Leu Ala Glu Trp Phe   Leu Phe Ser Arg Thr   His Ser
    1830                  1835                  1840

tta aag cca   caa ttt acc cca acg   gaa cgg gaa atg tta   gcg tca        15272
Leu Lys Pro   Gln Phe Thr Pro Thr   Glu Arg Glu Met Leu   Ala Ser
    1845                  1850                  1855

ttt ttt acg   ttg tat gtt act ctt   ggt gga gga atg ttg   aac tgg        15317
Phe Phe Thr   Leu Tyr Val Thr Leu   Gly Gly Gly Met Leu   Asn Trp
    1860                  1865                  1870

atc tgt aga   gca act gca atg tat   tta gct gct cct tac   cat tcc        15362
Ile Cys Arg   Ala Thr Ala Met Tyr   Leu Ala Ala Pro Tyr   His Ser
    1875                  1880                  1885

cgt tcg gct   tac atc gcg gtc tgt   gaa tct ctg ccc tat   tac tat        15407
Arg Ser Ala   Tyr Ile Ala Val Cys   Glu Ser Leu Pro Tyr   Tyr Tyr
    1890                  1895                  1900

atc ccg gtt   aat agt gac ctg tta   tgt gat tta gag gta   tta ctg        15452
Ile Pro Val   Asn Ser Asp Leu Leu   Cys Asp Leu Glu Val   Leu Leu
    1905                  1910                  1915

tta ggc gag   gtc gac ctc cca act   gtt tgt gaa tcc tac   gca act        15497
Leu Gly Glu   Val Asp Leu Pro Thr   Val Cys Glu Ser Tyr   Ala Thr
    1920                  1925                  1930

att gca cac   gaa tta acc gga tat   gag gct gtt cgc aca   gca gcc        15542
Ile Ala His   Glu Leu Thr Gly Tyr   Glu Ala Val Arg Thr   Ala Ala
    1935                  1940                  1945

aca aat ttt   atg ata gag ttt gcc   gat tgt tat aag gaa   agt gag        15587
Thr Asn Phe   Met Ile Glu Phe Ala   Asp Cys Tyr Lys Glu   Ser Glu
    1950                  1955                  1960

acc gat tta   atg gta agc gcg tac   ctg ggg gcc gtt tta   ttg tta        15632
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Thr Asp Leu  Met Val Ser Ala Tyr  Leu Gly Ala Val Leu  Leu Leu
    1965                    1970                 1975


caa cgg gtg  ttg ggt cat gca aat  ctt ctt ttg ttg ctt  ctc tcc      15677
Gln Arg Val  Leu Gly His Ala Asn  Leu Leu Leu Leu Leu  Leu Ser
    1980                    1985                 1990

ggt gct gcg  ttg tac gga gga tgt  tca att tac atc ccc  cga ggt      15722
Gly Ala Ala  Leu Tyr Gly Gly Cys  Ser Ile Tyr Ile Pro  Arg Gly
    1995                    2000                 2005

att tta gat  gca tat aat act tta  atg ttg gca gca agt  cct ctt      15767
Ile Leu Asp  Ala Tyr Asn Thr Leu  Met Leu Ala Ala Ser  Pro Leu
    2010                    2015                 2020

tac gct cac  caa act tta aca tcc  ttt tgg aaa gac cgc  gat gat      15812
Tyr Ala His  Gln Thr Leu Thr Ser  Phe Trp Lys Asp Arg  Asp Asp
    2025                    2030                 2035

gca atg caa  act ttg ggg att cga  ccg aca acg gac gtt  tta ccc      15857
Ala Met Gln  Thr Leu Gly Ile Arg  Pro Thr Thr Asp Val  Leu Pro
    2040                    2045                 2050

aaa gag caa  gac agg ata gtt cag  gca tca cct ata gag  atg aac      15902
Lys Glu Gln  Asp Arg Ile Val Gln  Ala Ser Pro Ile Glu  Met Asn
    2055                    2060                 2065

ttc cgt ttt  gtg gga ttg gag acc  atc tat ccc cga gaa  cag ccc      15947
Phe Arg Phe  Val Gly Leu Glu Thr  Ile Tyr Pro Arg Glu  Gln Pro
    2070                    2075                 2080

att ccc tcc  gtg gac cta gcc gaa  aat ctt atg caa tac  agg aat      15992
Ile Pro Ser  Val Asp Leu Ala Glu  Asn Leu Met Gln Tyr  Arg Asn
    2085                    2090                 2095

gaa att ctg  ggt ttg gat tgg aaa  agc gta gcc atg cat  tta cta      16037
Glu Ile Leu  Gly Leu Asp Trp Lys  Ser Val Ala Met His  Leu Leu
    2100                    2105                 2110

cga aaa tat  taa gggttgtgat tttttcatt aggatgaaaa gaacgtttcc         16089
Arg Lys Tyr
    2115


tagccacacc cacaaaggag tttgtaaaat aaaatctctg tttagacctt aaaatttgtt   16149

gtgtgtgttg tgtggggggt ccgtgaggat cgacctttac aagatataat ttgtccatat   16209

cgca atg ttt tct cgg ttt  gcg cgt tcc ttt tcc  agc gat gat aga      16255
     Met Phe Ser Arg Phe  Ala Arg Ser Phe Ser  Ser Asp Asp Arg
         2120                    2125

acg  cgt aaa tct tat gat  ggt agt tac caa agt  ttt aat gcc ggc      16300
Thr  Arg Lys Ser Tyr Asp  Gly Ser Tyr Gln Ser  Phe Asn Ala Gly
2130             2135                    2140

gaa  cgt gat ttg ccc aca  cct acc cgg gac tgg  tgt tct att tcc      16345
Glu  Arg Asp Leu Pro Thr  Pro Thr Arg Asp Trp  Cys Ser Ile Ser
2145             2150                    2155

caa  cgc ata acc agc gag  cgc gtg agg gat gga  tgt ctt att cca      16390
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Gln  Arg Ile Thr Ser Glu  Arg Val Arg Asp Gly  Cys Leu Ile Pro
2160              2165              2170

acg  ccc ggc gag gct ttg  gag acg gcg gta aag  gct tta tct gaa    16435
Thr  Pro Gly Glu Ala Leu  Glu Thr Ala Val Lys  Ala Leu Ser Glu
2175              2180              2185

aag  acc gac agc cta aca  tcg ccg gtt tta caa  agt acc gaa aga    16480
Lys  Thr Asp Ser Leu Thr  Ser Pro Val Leu Gln  Ser Thr Glu Arg
2190              2195              2200

cac  agt gtt ctg ctt gga  tta cac cat aat aat  gtt cct gaa tcg    16525
His  Ser Val Leu Leu Gly  Leu His His Asn Asn  Val Pro Glu Ser
2205              2210              2215

ttg  gtg gtc tcg tgt atg  tct aac gat gtt cat  gac ggg ttt atg    16570
Leu  Val Val Ser Cys Met  Ser Asn Asp Val His  Asp Gly Phe Met
2220              2225              2230

cag  cgt tat atg gaa aca  att caa aga tgt ttg  gat gac ctg aaa    16615
Gln  Arg Tyr Met Glu Thr  Ile Gln Arg Cys Leu  Asp Asp Leu Lys
2235              2240              2245

ctt  tct ggg gat gga ctt  tgg tgg gtt tat gaa  aat aca tat tgg    16660
Leu  Ser Gly Asp Gly Leu  Trp Trp Val Tyr Glu  Asn Thr Tyr Trp
2250              2255              2260

cag  tat ctc aaa tac acc  aca gga gcc gag gta  ccg gtg act tca    16705
Gln  Tyr Leu Lys Tyr Thr  Thr Gly Ala Glu Val  Pro Val Thr Ser
2265              2270              2275

gag  aag gta aat aaa aag  tct aaa tcc acg gtt  ttg ttg ttt tca    16750
Glu  Lys Val Asn Lys Lys  Ser Lys Ser Thr Val  Leu Leu Phe Ser
2280              2285              2290

tcc  gta gtt gcc aat aaa  cca ata tcc aga cat  cct ttt aaa tct    16795
Ser  Val Val Ala Asn Lys  Pro Ile Ser Arg His  Pro Phe Lys Ser
2295              2300              2305

aaa  gtt ata aat tcg gat  tac cgg gga ata tgt  cag gag cta cgt    16840
Lys  Val Ile Asn Ser Asp  Tyr Arg Gly Ile Cys  Gln Glu Leu Arg
2310              2315              2320

gag  gcg tta gga gct gtg  caa aag tat atg tat  ttt atg cgt cca    16885
Glu  Ala Leu Gly Ala Val  Gln Lys Tyr Met Tyr  Phe Met Arg Pro
2325              2330              2335

gat  gat cct aca aac ccc  agc ccg gat aca aga  ata cgt gta caa    16930
Asp  Asp Pro Thr Asn Pro  Ser Pro Asp Thr Arg  Ile Arg Val Gln
2340              2345              2350

gaa  att gcg gct tac acg  gct act ggc tac ggg  tgg atg tta tgg    16975
Glu  Ile Ala Ala Tyr Thr  Ala Thr Gly Tyr Gly  Trp Met Leu Trp
2355              2360              2365

ttc  ttg gac gtt gtg gac  gcc agg gta tgt cgc  cat ctc aaa ctt    17020
Phe  Leu Asp Val Val Asp  Ala Arg Val Cys Arg  His Leu Lys Leu
2370              2375              2380

caa  ttt cga cgg att cga  ggg ccg cgc gcg tct  gtt att cca gat    17065
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Gln   Phe   Arg   Arg   Ile   Arg   Gly   Pro   Arg   Ala   Ser   Val   Ile   Pro   Asp
2385                    2390                    2395

gat   ttg   ctt   aga   cga   cat   tta   aaa   acg   ggt   cct   gcg   gtc   tca   gcg        17110
Asp   Leu   Leu   Arg   Arg   His   Leu   Lys   Thr   Gly   Pro   Ala   Val   Ser   Ala
2400                    2405                    2410

ggc   aca   gga   gtt   gcg   ttt   att   tta   gca   gca   aca   act   gcc   agc   gct        17155
Gly   Thr   Gly   Val   Ala   Phe   Ile   Leu   Ala   Ala   Thr   Thr   Ala   Ser   Ala
2415                    2420                    2425

ctt   act   gcg   ctt   ttg   cgt   att   agt   gta   tta   tgg   cga   aag   gaa   gag        17200
Leu   Thr   Ala   Leu   Leu   Arg   Ile   Ser   Val   Leu   Trp   Arg   Lys   Glu   Glu
2430                    2435                    2440

tgg   cgg   gat   ggt   tta   aat   gga   acc   gca   gct   gca   att   gtt   gcg   gcg        17245
Trp   Arg   Asp   Gly   Leu   Asn   Gly   Thr   Ala   Ala   Ala   Ile   Val   Ala   Ala
2445                    2450                    2455

gtt   gaa   ctt   att   acg   ctt   ttg   cac   cac   cat   ttt   caa   tac   tta   att        17290
Val   Glu   Leu   Ile   Thr   Leu   Leu   His   His   His   Phe   Gln   Tyr   Leu   Ile
2460                    2465                    2470

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Asn   Met   Met   Leu   Ile   Gly   Tyr   Ala   Cys   Trp   Gly   Asp   Gly   Gly   Leu
2475                    2480                    2485

aac   gat   cct   tat   ata   tta   aag   gcg   cta   cgt   gcc   cag   gga   cgg   ttt        17380
Asn   Asp   Pro   Tyr   Ile   Leu   Lys   Ala   Leu   Arg   Ala   Gln   Gly   Arg   Phe
2490                    2495                    2500

tta   tat   ttt   gcg   ggt   cag   ttg   gtc   aga   aca   atg   tca   aca   cac   agt        17425
Leu   Tyr   Phe   Ala   Gly   Gln   Leu   Val   Arg   Thr   Met   Ser   Thr   His   Ser
2505                    2510                    2515

tgg   gtt   gtg   tta   gag   acc   agc   acc   cat   atg   tgg   ttt   tcc   cgg   gcc        17470
Trp   Val   Val   Leu   Glu   Thr   Ser   Thr   His   Met   Trp   Phe   Ser   Arg   Ala
2520                    2525                    2530

gtg   gcg   cag   agt   att   tta   gca   cat   ggg   ggt   aaa   ccc   aca   aag   tat        17515
Val   Ala   Gln   Ser   Ile   Leu   Ala   His   Gly   Gly   Lys   Pro   Thr   Lys   Tyr
2535                    2540                    2545

tat   gct   cag   gtt   ctt   gcc   gcc   agt   aaa   cgg   tat   act   ccg   tta   cat        17560
Tyr   Ala   Gln   Val   Leu   Ala   Ala   Ser   Lys   Arg   Tyr   Thr   Pro   Leu   His
2550                    2555                    2560

tta   aga   cgt   ata   tcc   gaa   cca   tcg   agt   gtg   tct   gat   cag   ccg   tat        17605
Leu   Arg   Arg   Ile   Ser   Glu   Pro   Ser   Ser   Val   Ser   Asp   Gln   Pro   Tyr
2565                    2570                    2575

att   cgt   ttt   aat   cga   ctg   gga   tct   cca   ata   ggg   aca   ggt   ata   ggg        17650
Ile   Arg   Phe   Asn   Arg   Leu   Gly   Ser   Pro   Ile   Gly   Thr   Gly   Ile   Gly
2580                    2585                    2590

aat   ttg   gaa   tgt   gtc   tgt   tta   acg   gga   aat   tat   tta   tct   gac   gac        17695
Asn   Leu   Glu   Cys   Val   Cys   Leu   Thr   Gly   Asn   Tyr   Leu   Ser   Asp   Asp
2595                    2600                    2605

gta   aat   gca   agt   tcg   cat   gta   att   aat   aca   gaa   gca   ccg   tta   aac        17740
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Val Asn Ala Ser Ser His  Val Ile Asn Thr Glu  Ala Pro Leu Asn
2610            2615                2620

agt ata gca ccc gat aca  aat aga cag cgg act  tct cgc gtt tta      17785
Ser Ile Ala Pro Asp Thr  Asn Arg Gln Arg Thr  Ser Arg Val Leu
2625            2630                2635

gtt cgt cca gac acg ggt  ttg gat gta act gtc  cga aaa aac cac      17830
Val Arg Pro Asp Thr Gly  Leu Asp Val Thr Val  Arg Lys Asn His
2640            2645                2650

tgt ctg gac ata ggc cat  acg gac ggt agt cca  gtt gac cca acg      17875
Cys Leu Asp Ile Gly His  Thr Asp Gly Ser Pro  Val Asp Pro Thr
2655            2660                2665

tat cct gat cat tac acc  cgg ata aag gcg gaa  tat gaa ggt ccg      17920
Tyr Pro Asp His Tyr Thr  Arg Ile Lys Ala Glu  Tyr Glu Gly Pro
2670            2675                2680

gtt cgg gat gaa tca aac  aca atg ttt gac caa  aga tcg gat tta      17965
Val Arg Asp Glu Ser Asn  Thr Met Phe Asp Gln  Arg Ser Asp Leu
2685            2690                2695

cgt cac ata gaa acc caa  gca tct tta aat gat  cac gta tat gaa      18010
Arg His Ile Glu Thr Gln  Ala Ser Leu Asn Asp  His Val Tyr Glu
2700            2705                2710

aat ata cca ccc aag gaa  gtg ggt ttt aac tca  tct tca gac ctg      18055
Asn Ile Pro Pro Lys Glu  Val Gly Phe Asn Ser  Ser Ser Asp Leu
2715            2720                2725

gat gtg gat agc ctt aac  ggg tac acc tcc gga  gac atg cat aca      18100
Asp Val Asp Ser Leu Asn  Gly Tyr Thr Ser Gly  Asp Met His Thr
2730            2735                2740

gac gat gac tta tca cca  gat ttt ata ccc aac  gac gtt ccc gtt      18145
Asp Asp Asp Leu Ser Pro  Asp Phe Ile Pro Asn  Asp Val Pro Val
2745            2750                2755

aga tgt aaa acc acg gtt  acg ttt agg aaa aat  acg cct aag agt      18190
Arg Cys Lys Thr Thr Val  Thr Phe Arg Lys Asn  Thr Pro Lys Ser
2760            2765                2770

cat cat taa gtacagcggt taatagatag ttatggacta ggcactttgg          18239
His His
2775

cggtcatttc cacaaccagg ttaaaattgg gggatttggg agaaaatagt ctattgcgta  18299

ttttctgttc aataattgga ctgcgttatt taaaggtctg attggttgat tgggttataa  18359

aaggaattac tcctttaaat tttacttaat gtacccacaa tatcaagtgg tcgtttgtat  18419

ttaacgatta ttaccggtac c atg gga gac ttg  tca tgt tgg aca aag  gtg  18470
                        Met Gly Asp Leu  Ser Cys Trp Thr Lys  Val
                             2780                      2785

ccg ggt ttt acg  tta acc ggc gaa ctt  cag tac tta aaa caa  gtg      18515
Pro Gly Phe Thr  Leu Thr Gly Glu Leu  Gln Tyr Leu Lys Gln  Val
     2790                 2795                  2800
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gat gat att tta    agg tat gga gtt cgg    aaa cgc gat cga aca    gga         18560
Asp Asp Ile Leu    Arg Tyr Gly Val Arg    Lys Arg Asp Arg Thr    Gly
            2805                2810                    2815

atc gga acg tta    tct tta ttt gga atg    caa gct cga tac aat    ttg         18605
Ile Gly Thr Leu    Ser Leu Phe Gly Met    Gln Ala Arg Tyr Asn    Leu
            2820                2825                    2830

cga aat gaa ttt    cct ctt tta act aca    aag cgt gtt ttt tgg    agg         18650
Arg Asn Glu Phe    Pro Leu Leu Thr Thr    Lys Arg Val Phe Trp    Arg
            2835                2840                    2845

gcc gtc gtg gaa    gag ttg tta tgg ttt    atc cgc ggg tca acc    gat         18695
Ala Val Val Glu    Glu Leu Leu Trp Phe    Ile Arg Gly Ser Thr    Asp
            2850                2855                    2860

tcc aaa gaa ctc    gcc gct aaa gat ata    cac ata tgg gat ata    tac         18740
Ser Lys Glu Leu    Ala Ala Lys Asp Ile    His Ile Trp Asp Ile    Tyr
            2865                2870                    2875

gga tcg agc aaa    ttt cta aat agg aat    ggc ttc cat aaa aga    cac         18785
Gly Ser Ser Lys    Phe Leu Asn Arg Asn    Gly Phe His Lys Arg    His
            2880                2885                    2890

acg ggg gac ctt    ggc ccc att tac ggc    ttc cag tgg aga cat    ttt         18830
Thr Gly Asp Leu    Gly Pro Ile Tyr Gly    Phe Gln Trp Arg His    Phe
            2895                2900                    2905

gga gcg gaa tat    aaa gac tgt caa tca    aac tat tta cag caa    gga         18875
Gly Ala Glu Tyr    Lys Asp Cys Gln Ser    Asn Tyr Leu Gln Gln    Gly
            2910                2915                    2920

atc gat cag ctg    caa act gtt ata gat    aca att aaa aca aac    cca         18920
Ile Asp Gln Leu    Gln Thr Val Ile Asp    Thr Ile Lys Thr Asn    Pro
            2925                2930                    2935

gaa agc cga cga    atg att ata tcg tct    tgg aat cca aag gat    atc         18965
Glu Ser Arg Arg    Met Ile Ile Ser Ser    Trp Asn Pro Lys Asp    Ile
            2940                2945                    2950

ccc tta atg gta    cta cct cca tgt cac    acg tta tgt cag ttt    tac         19010
Pro Leu Met Val    Leu Pro Pro Cys His    Thr Leu Cys Gln Phe    Tyr
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Val Ala Asn Gly    Glu Leu Ser Cys Gln    Val Tyr Gln Arg Ser    Gly
            2970                2975                    2980

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Asp Met Gly Leu    Gly Val Pro Phe Asn    Ile Ala Gly Tyr Ala    Leu
            2985                2990                    2995

ctt acc tac ata    gta gcg cat gtt aca    gga ctt aaa acc gga    gat         19145
Leu Thr Tyr Ile    Val Ala His Val Thr    Gly Leu Lys Thr Gly    Asp
            3000                3005                    3010

tta att cat aca    atg ggg gat gca cat    att tac ttg aat cat    ata         19190
Leu Ile His Thr    Met Gly Asp Ala His    Ile Tyr Leu Asn His    Ile
            3015                3020                    3025
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Asp Ala Leu Lys  Val Gln Leu Ala Arg  Ser Pro Lys Pro Phe  Pro
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tgc ctt aaa att  att cga aat gta aca  gat ata aac gac ttt  aaa        19280
Cys Leu Lys Ile  Ile Arg Asn Val Thr  Asp Ile Asn Asp Phe  Lys
            3045                  3050                  3055

tgg gac gat ttt  cag ctt gat gga tat  aat cca cac ccc ccc  cta        19325
Trp Asp Asp Phe  Gln Leu Asp Gly Tyr  Asn Pro His Pro Pro  Leu
            3060                  3065                  3070

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Lys Met Glu Met  Ala Leu
            3075

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3370                3375                 3380

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Pro  His  Gln  Met  Asp  Thr   Ser  Thr  Arg  Ser  Pro   Thr  Tyr  Asp  Ser
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Trp  Arg  His  Gly  Glu  Val   Phe  Lys  Ser  Leu  Thr   Val  Ala  Thr  Ser
3400                3405                 3410

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Gly  Lys  Thr  Glu  Asn  Gly   Val  Ser  Val  Ser  Lys   Tyr  Ala  Ser  Asn
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Pro  Pro  Ser  Ser  Ser  Pro   Leu  Asp  Asn  Leu  Glu   Arg  Ala  Phe  Val
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3490                3495                 3500

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Pro  Leu  Pro  Leu  Asn  Thr   Val  Leu  Thr  Lys  Tyr   Trp  Asn
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ttaagtcagc gtagaatata cc atg gaa gaa  cca att tgt tat gat  aca    30785
                          Met Glu Glu  Pro Ile Cys Tyr Asp  Thr
                               3535                      3540

caa aaa ctt ttg  gat gat tta agt  aac  ttg aaa gta caa gaa  gcg    30830
Gln Lys Leu Leu  Asp Asp Leu Ser  Asn  Leu Lys Val Gln Glu  Ala
         3545              3550                      3555
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gac aac gaa aga   cca tgg tca cca gag   aaa aca gaa atc gcc   aga         30875
Asp Asn Glu Arg   Pro Trp Ser Pro Glu   Lys Thr Glu Ile Ala   Arg
          3560              3565                  3570

gtt aag gta gtt   aag ttt tta cga tct   acc cag aaa att cca   gct         30920
Val Lys Val Val   Lys Phe Leu Arg Ser   Thr Gln Lys Ile Pro   Ala
          3575              3580                  3585

aaa cat ttt att   cag ata tgg gaa ccc   ctg cat tct aat atc   tgt         30965
Lys His Phe Ile   Gln Ile Trp Glu Pro   Leu His Ser Asn Ile   Cys
          3590              3595                  3600

ttt gta tat tcc   aat aca ttt ttg gcg   gag gct gct ttc acg   gcc         31010
Phe Val Tyr Ser   Asn Thr Phe Leu Ala   Glu Ala Ala Phe Thr   Ala
          3605              3610                  3615

gaa aat tta ccc   gga ctg ttg ttt tgg   aga cta gat cta gac   tgg         31055
Glu Asn Leu Pro   Gly Leu Leu Phe Trp   Arg Leu Asp Leu Asp   Trp
          3620              3625                  3630

acg ata gag gag   cca ggt aat agc tta   aaa att tta acc cag   cta         31100
Thr Ile Glu Glu   Pro Gly Asn Ser Leu   Lys Ile Leu Thr Gln   Leu
          3635              3640                  3645

tca agt gta gta   caa gat tcc gag acg   tta cat cgt tta tcg   gcc         31145
Ser Ser Val Val   Gln Asp Ser Glu Thr   Leu His Arg Leu Ser   Ala
          3650              3655                  3660

aat aaa tta cga   acc tcg tct aaa ttt   gga ccc gtt tcg ata   cac         31190
Asn Lys Leu Arg   Thr Ser Ser Lys Phe   Gly Pro Val Ser Ile   His
          3665              3670                  3675

ttc att ata acg   gac tgg ata aat atg   tac gag gtc gcc tta   aag         31235
Phe Ile Ile Thr   Asp Trp Ile Asn Met   Tyr Glu Val Ala Leu   Lys
          3680              3685                  3690

gat gca aca aca   gcc att gaa tca cca   ttc act cac gct cgt   att         31280
Asp Ala Thr Thr   Ala Ile Glu Ser Pro   Phe Thr His Ala Arg   Ile
          3695              3700                  3705

gga atg ttg gaa   agc gcc att gca gct   tta aca caa cat aaa   ttt         31325
Gly Met Leu Glu   Ser Ala Ile Ala Ala   Leu Thr Gln His Lys   Phe
          3710              3715                  3720

gcg atc att tac   gat atg cca ttt gtt   caa gag ggg att cgt   gtt         31370
Ala Ile Ile Tyr   Asp Met Pro Phe Val   Gln Glu Gly Ile Arg   Val
          3725              3730                  3735

tta aca caa tat   gca gga tgg ctt ctt   ccg ttt aat gtt atg   tgg         31415
Leu Thr Gln Tyr   Ala Gly Trp Leu Leu   Pro Phe Asn Val Met   Trp
          3740              3745                  3750

aat cag att caa   aat agc tca ctc act   cct cta aca cga gcc   ctt         31460
Asn Gln Ile Gln   Asn Ser Ser Leu Thr   Pro Leu Thr Arg Ala   Leu
          3755              3760                  3765

ttt ata atc tgt   atg att gat gaa tat   ctc acg gaa acg cca   gta         31505
Phe Ile Ile Cys   Met Ile Asp Glu Tyr   Leu Thr Glu Thr Pro   Val
          3770              3775                  3780
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cat agc ata tca   gaa tta ttt gca gat   act gta aat tta att   aaa          31550
His Ser Ile Ser   Glu Leu Phe Ala Asp   Thr Val Asn Leu Ile   Lys
        3785                  3790                  3795

gat gag gcg ttc   gta tcc atc gaa gaa   gcg gta acg aat cca   cga          31595
Asp Glu Ala Phe   Val Ser Ile Glu Glu   Ala Val Thr Asn Pro   Arg
        3800                  3805                  3810

acg gtg cac gag   tca cga att tcc tca   gct ctg gct tat cga   gac          31640
Thr Val His Glu   Ser Arg Ile Ser Ser   Ala Leu Ala Tyr Arg   Asp
        3815                  3820                  3825

cct tat gtt ttt   gag aca tcc ccg gga   atg ctt gct agg aga   ctt          31685
Pro Tyr Val Phe   Glu Thr Ser Pro Gly   Met Leu Ala Arg Arg   Leu
        3830                  3835                  3840

aga tta gac aat   ggt ata tgg gaa agc   aac ctc tta tcg ttg   tcc          31730
Arg Leu Asp Asn   Gly Ile Trp Glu Ser   Asn Leu Leu Ser Leu   Ser
        3845                  3850                  3855

acc ccc gga att   cat att gag gcg ctg   tta cat tta cta aac   tcc          31775
Thr Pro Gly Ile   His Ile Glu Ala Leu   Leu His Leu Leu Asn   Ser
        3860                  3865                  3870

gac ccg gaa gcg   gaa acc aca tct gga   agt aat gta gca gaa   cac          31820
Asp Pro Glu Ala   Glu Thr Thr Ser Gly   Ser Asn Val Ala Glu   His
        3875                  3880                  3885

acc cgt ggc att   tgg gaa aag gtt cag   gct agt aca tcg cct   agt          31865
Thr Arg Gly Ile   Trp Glu Lys Val Gln   Ala Ser Thr Ser Pro   Ser
        3890                  3895                  3900

atg tta ata agc   acc ctt gcc gaa tcc   ggg ttt aca aga ttt   tca          31910
Met Leu Ile Ser   Thr Leu Ala Glu Ser   Gly Phe Thr Arg Phe   Ser
        3905                  3910                  3915

tgc aaa ttg cta   cgt cgg ttt att gct   cac cac aca ctc gcc   ggt          31955
Cys Lys Leu Leu   Arg Arg Phe Ile Ala   His His Thr Leu Ala   Gly
        3920                  3925                  3930

ttt att cac gga   agc gtt gta gca gac   gag cat att aca gat   ttc          32000
Phe Ile His Gly   Ser Val Val Ala Asp   Glu His Ile Thr Asp   Phe
        3935                  3940                  3945

caa caa aca cta   gga tgt ctc gct tta   gtg ggt gga ctg gca   tac          32045
Gln Gln Thr Leu   Gly Cys Leu Ala Leu   Val Gly Gly Leu Ala   Tyr
        3950                  3955                  3960

caa tta gtg gaa   acg tac gct cct act   acc gag tat gtg tta   aca          32090
Gln Leu Val Glu   Thr Tyr Ala Pro Thr   Thr Glu Tyr Val Leu   Thr
        3965                  3970                  3975

tat aca cgg aca   gta aac gag acc gaa   aaa cgg tat gaa acg   cta          32135
Tyr Thr Arg Thr   Val Asn Glu Thr Glu   Lys Arg Tyr Glu Thr   Leu
        3980                  3985                  3990

tta ccc gcc tta   gga tta cca ccg gga   ggc ctg gga caa att   atg          32180
Leu Pro Ala Leu   Gly Leu Pro Pro Gly   Gly Leu Gly Gln Ile   Met
        3995                  4000                  4005
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cgg cgc tgt ttt   gct cca cga ccc   ctt att gaa agt ata caa   gcg        32225
Arg Arg Cys Phe   Ala Pro Arg Pro   Leu Ile Glu Ser Ile Gln   Ala
            4010                4015                      4020

aca cgc gta ata   cta ctt aat gaa   att tca cat gca gaa   gct aga        32270
Thr Arg Val Ile   Leu Leu Asn Glu   Ile Ser His Ala Glu   Ala Arg
            4025                4030                  4035

gag aca aca tat   ttt aag caa aca   cat aat caa tcc tca   ggt gcg        32315
Glu Thr Thr Tyr   Phe Lys Gln Thr   His Asn Gln Ser Ser   Gly Ala
            4040                4045                  4050

tta tta cca caa   gca gga caa agt   gcc gta cgc gaa gcc   gta cta        32360
Leu Leu Pro Gln   Ala Gly Gln Ser   Ala Val Arg Glu Ala   Val Leu
            4055                4060                  4065

acc tgg ttt gac   cta cgt atg gat   tca aga tgg ggt att   act ccc        32405
Thr Trp Phe Asp   Leu Arg Met Asp   Ser Arg Trp Gly Ile   Thr Pro
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ccg gtg gat gtg   ggt atg aca cct   cct att tgt gtt gat   cca ccg        32450
Pro Val Asp Val   Gly Met Thr Pro   Pro Ile Cys Val Asp   Pro Pro
            4085                4090                  4095

gct aca ggg ttg   gaa gct gtc atg   ata aca gaa gca cta   aag att        32495
Ala Thr Gly Leu   Glu Ala Val Met   Ile Thr Glu Ala Leu   Lys Ile
            4100                4105                  4110

gca tat cct acc   gaa tat aat cgc   tct agc gtg ttt gtg   gaa ccg        32540
Ala Tyr Pro Thr   Glu Tyr Asn Arg   Ser Ser Val Phe Val   Glu Pro
            4115                4120                  4125

tcg ttt gtg cct   tat att att gca   aca agc acg ctt gat   gcc ctt        32585
Ser Phe Val Pro   Tyr Ile Ile Ala   Thr Ser Thr Leu Asp   Ala Leu
            4130                4135                  4140

tcg gca aca ata   gct ttg tct ttt   gat aca cgg gga ata   cag caa        32630
Ser Ala Thr Ile   Ala Leu Ser Phe   Asp Thr Arg Gly Ile   Gln Gln
            4145                4150                  4155

gcc ttg tct att   ctt cag tgg gct   cgc gat tat gga tcc   gga acc        32675
Ala Leu Ser Ile   Leu Gln Trp Ala   Arg Asp Tyr Gly Ser   Gly Thr
            4160                4165                  4170

gtg ccc aat gca   gat gga tat cgc   aca aaa cta tct gct   ctt ata        32720
Val Pro Asn Ala   Asp Gly Tyr Arg   Thr Lys Leu Ser Ala   Leu Ile
            4175                4180                  4185

aca ata tta gaa   cct ttt acc cgt   aca cac ccc cca gta   ctt tta        32765
Thr Ile Leu Glu   Pro Phe Thr Arg   Thr His Pro Pro Val   Leu Leu
            4190                4195                  4200

cca tct cac gtt   tct act ata gat   tcc ctt ata tgc gaa   ctt cat        32810
Pro Ser His Val   Ser Thr Ile Asp   Ser Leu Ile Cys Glu   Leu His
            4205                4210                  4215

cgg act gtt ggc   att gcc gtt gac   ctg ctt ccc cag cac   gtc cgt        32855
Arg Thr Val Gly   Ile Ala Val Asp   Leu Leu Pro Gln His   Val Arg
            4220                4225                  4230
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Pro Leu Val Pro    Asp Arg Pro Ser Ile    Thr Asn Ser Val Phe    Leu
        4235                   4240                   4245

gca act ctc tat    tat gat gaa ctt tac    ggt cgt tgg acc cga    ctg        32945
Ala Thr Leu Tyr    Tyr Asp Glu Leu Tyr    Gly Arg Trp Thr Arg    Leu
        4250                   4255                   4260

gat aaa aca tcg    cag gcg ttg gtt gaa    aat ttt aca tcc aac    gcg        32990
Asp Lys Thr Ser    Gln Ala Leu Val Glu    Asn Phe Thr Ser Asn    Ala
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tta gtg gtt tct    cgg tac atg tta atg    tta caa aaa ttt ttt    gcg        33035
Leu Val Val Ser    Arg Tyr Met Leu Met    Leu Gln Lys Phe Phe    Ala
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Cys Arg Phe Tyr    Pro Thr Pro Asp Leu    Gln Ala Val Gly Ile    Cys
        4295                   4300                   4305

aac cca aag gtt    gaa cgc gat gaa caa    ttt ggg gta tgg cgt    tta        33125
Asn Pro Lys Val    Glu Arg Asp Glu Gln    Phe Gly Val Trp Arg    Leu
        4310                   4315                   4320

aac gat ctt gct    gat gcg gtt ggt cat    att gtt ggg aca ata    caa        33170
Asn Asp Leu Ala    Asp Ala Val Gly His    Ile Val Gly Thr Ile    Gln
        4325                   4330                   4335

gga atc cga acg    caa atg aga gtg gga    ata tcc agc ctg cgc    aca        33215
Gly Ile Arg Thr    Gln Met Arg Val Gly    Ile Ser Ser Leu Arg    Thr
        4340                   4345                   4350

att atg gcc gat    gct tcc tca gcc ctt    agg gaa tgt gaa aat    tta        33260
Ile Met Ala Asp    Ala Ser Ser Ala Leu    Arg Glu Cys Glu Asn    Leu
        4355                   4360                   4365

atg act aaa acc    tcc act tct gct att    ggg cct ctt ttt tca    acg        33305
Met Thr Lys Thr    Ser Thr Ser Ala Ile    Gly Pro Leu Phe Ser    Thr
        4370                   4375                   4380

atg gct tcc cgg    tat gca cgg ttt aca    cag gat caa atg gac    att        33350
Met Ala Ser Arg    Tyr Ala Arg Phe Thr    Gln Asp Gln Met Asp    Ile
        4385                   4390                   4395

tta atg cgt gtt    gac aaa cta aca aca    gga gaa aat ata ccc    ggt        33395
Leu Met Arg Val    Asp Lys Leu Thr Thr    Gly Glu Asn Ile Pro    Gly
        4400                   4405                   4410

ctt gca aat gta    gag att ttt tta aat    agg tgg gaa cga ata    gca        33440
Leu Ala Asn Val    Glu Ile Phe Leu Asn    Arg Trp Glu Arg Ile    Ala
        4415                   4420                   4425

aca gct tgt agg    cat gcc acg gca gtc    ccg tcg gcc gaa tct    att        33485
Thr Ala Cys Arg    His Ala Thr Ala Val    Pro Ser Ala Glu Ser    Ile
        4430                   4435                   4440

gca acc gtg tgt    aat gaa ttg agg cgc    ggt tta aaa aat ata    caa        33530
Ala Thr Val Cys    Asn Glu Leu Arg Arg    Gly Leu Lys Asn Ile    Gln
        4445                   4450                   4455
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gag gat cgt gta   aat gcc cca acc tca   tat atg agt cac gcc   cga        33575
Glu Asp Arg Val   Asn Ala Pro Thr Ser   Tyr Met Ser His Ala   Arg
            4460                    4465            4470

aat ctg gaa gat   cac aag gca gca gtt   tca ttc gtt atg gac   tcc        33620
Asn Leu Glu Asp   His Lys Ala Ala Val   Ser Phe Val Met Asp   Ser
            4475                    4480            4485

agg caa cag ttt   att gtg gat tct gga   cct cag atg ggc gcg   gtt        33665
Arg Gln Gln Phe   Ile Val Asp Ser Gly   Pro Gln Met Gly Ala   Val
            4490                    4495            4500

tta act tca caa   tgt aat ata gga aca   tgg gag aat gta aat   gca        33710
Leu Thr Ser Gln   Cys Asn Ile Gly Thr   Trp Glu Asn Val Asn   Ala
            4505                    4510            4515

acg ttt tta cat   gat aat gtt aaa ata   acg aca acg gtc aga   gac        33755
Thr Phe Leu His   Asp Asn Val Lys Ile   Thr Thr Thr Val Arg   Asp
            4520                    4525            4530

gta att tca gag   gct ccg acg ctg ata   ata gga caa aga tgg   ctt        33800
Val Ile Ser Glu   Ala Pro Thr Leu Ile   Ile Gly Gln Arg Trp   Leu
            4535                    4540            4545

cgt cca gat gag   att tta tct aat gta   gat ttg cgt ctt ggc   gta        33845
Arg Pro Asp Glu   Ile Leu Ser Asn Val   Asp Leu Arg Leu Gly   Val
            4550                    4555            4560

ccc ggg aat aca   agt ggg agt gac cct   taa tataaacag gcgtgtttat         33895
Pro Gly Asn Thr   Ser Gly Ser Asp Pro
            4565                    4570

gtacattaaa gtatttgtgg tttttattga ctggcgtttt cgtttgtata acgctgttgt        33955

tgctagtatt ttcataacct cctaggtttt tggagctaca cgtgcttatt caacgctctt        34015

tgggatttga atcatcgtaa acgtagcgtc cctaccagtt gagcgcgtaa ttttcgtaag        34075

caataaa atg gat ata att ccg   cct ata gct gtc act   gtt gcg gga gtg      34124
        Met Asp Ile Ile Pro   Pro Ile Ala Val Thr   Val Ala Gly Val
                    4575                    4580

gga   agc cgt aat caa ttt   gac ggt gcc ctg gga   ccg gcg tca ggt        34169
Gly   Ser Arg Asn Gln Phe   Asp Gly Ala Leu Gly   Pro Ala Ser Gly
4585                    4590                    4595

ctg   tca tgt tta aga aca   tct tta tcg ttt ttg   cat atg aca tat        34214
Leu   Ser Cys Leu Arg Thr   Ser Leu Ser Phe Leu   His Met Thr Tyr
4600                    4605                    4610

gcg   cat gga att aat gca   acc ctg tca tca gac   atg att gat gga        34259
Ala   His Gly Ile Asn Ala   Thr Leu Ser Ser Asp   Met Ile Asp Gly
4615                    4620                    4625

tgt   tta caa gag ggt gca   gca tgg act acg gat   ctg tct aat atg        34304
Cys   Leu Gln Glu Gly Ala   Ala Trp Thr Thr Asp   Leu Ser Asn Met
4630                    4635                    4640

ggg   agg ggt gtc cca gat   atg tgt gct ctt gtt   gat ctc ccc aat        34349
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Gly Arg Gly Val Pro Asp  Met Cys Ala Leu Val  Asp Leu Pro Asn
4645                4650                   4655

cga att tca tat att aaa  ctg ggg gac act acc  agt acg tgc tgc     34394
Arg Ile Ser Tyr Ile Lys  Leu Gly Asp Thr Thr  Ser Thr Cys Cys
4660                4665                   4670

gtt ttg tct aga ata tac  ggc gat agc cat ttt  ttt acc gtt cca     34439
Val Leu Ser Arg Ile Tyr  Gly Asp Ser His Phe  Phe Thr Val Pro
4675                4680                   4685

gac gag ggt ttt atg tgc  aca caa att ccc gct  aga gcg ttt ttc     34484
Asp Glu Gly Phe Met Cys  Thr Gln Ile Pro Ala  Arg Ala Phe Phe
4690                4695                   4700

gat gat gtg tgg atg gga  cgt gaa gag tcg tat  aca att ata act     34529
Asp Asp Val Trp Met Gly  Arg Glu Glu Ser Tyr  Thr Ile Ile Thr
4705                4710                   4715

gta gac tca acg gga atg  gcc atc tat cgt cag  gga aac ata tct     34574
Val Asp Ser Thr Gly Met  Ala Ile Tyr Arg Gln  Gly Asn Ile Ser
4720                4725                   4730

ttt att ttt gat cca cat  ggc cat ggg act ata  gga cag gct gta     34619
Phe Ile Phe Asp Pro His  Gly His Gly Thr Ile  Gly Gln Ala Val
4735                4740                   4745

gtt gtt cgg gtg aat acc  acg gat gtg tac tct  tat atc gca tcg     34664
Val Val Arg Val Asn Thr  Thr Asp Val Tyr Ser  Tyr Ile Ala Ser
4750                4755                   4760

gag tat acc cac cgc ccc  gat aac gta gaa tcc  caa tgg gcc gct     34709
Glu Tyr Thr His Arg Pro  Asp Asn Val Glu Ser  Gln Trp Ala Ala
4765                4770                   4775

gca tta gtt ttt ttt gtc  acc gca aac gac ggt  ccc gta agc gaa     34754
Ala Leu Val Phe Phe Val  Thr Ala Asn Asp Gly  Pro Val Ser Glu
4780                4785                   4790

gaa gcg cta tct tcg gca  gta acg ctt ata tac  gga agc tgt gat     34799
Glu Ala Leu Ser Ser Ala  Val Thr Leu Ile Tyr  Gly Ser Cys Asp
4795                4800                   4805

aca tat ttt aca gat gaa  caa tat tgc gaa aaa  ctg gtt aca gct     34844
Thr Tyr Phe Thr Asp Glu  Gln Tyr Cys Glu Lys  Leu Val Thr Ala
4810                4815                   4820

caa cat ccg ttg ctt ctt  tca cct cct aat tcc  acg aca att gtg     34889
Gln His Pro Leu Leu Leu  Ser Pro Pro Asn Ser  Thr Thr Ile Val
4825                4830                   4835

ctt aat aaa tcg tct ata  gta cct ctt cac caa  aac gtt ggt gaa     34934
Leu Asn Lys Ser Ser Ile  Val Pro Leu His Gln  Asn Val Gly Glu
4840                4845                   4850

agt gta tcc ttg gaa gca  acc cta cat tca acg  tta acc aac acg     34979
Ser Val Ser Leu Glu Ala  Thr Leu His Ser Thr  Leu Thr Asn Thr
4855                4860                   4865

gtt gca ctg gac cct aga  tgt agt tac agc gag  gtt gat cct tgg     35024
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Val Ala Leu Asp Pro Arg   Cys Ser Tyr Ser Glu   Val Asp Pro Trp
4870              4875                 4880

cat gcg gtt cta gaa aca   acc tcg act ggg tct   ggc gtt ttg gat        35069
His Ala Val Leu Glu Thr   Thr Ser Thr Gly Ser   Gly Val Leu Asp
4885              4890                 4895

tgt cgt cgt aga cgc cgt   cct tca tgg act cct   cct tca agc gag        35114
Cys Arg Arg Arg Arg Arg   Pro Ser Trp Thr Pro   Pro Ser Ser Glu
4900              4905                 4910

gaa aat tta gct tgt atc   gac gat ggc ttg gta   aat aat aca cat        35159
Glu Asn Leu Ala Cys Ile   Asp Asp Gly Leu Val   Asn Asn Thr His
4915              4920                 4925

tcc acg gat aat tta cat   aaa ccc gct aaa aag   gtt ctc aaa ttt        35204
Ser Thr Asp Asn Leu His   Lys Pro Ala Lys Lys   Val Leu Lys Phe
4930              4935                 4940

aaa cca act gta gac gtg   ccg gat aaa aca caa   gtg gca cat gta        35249
Lys Pro Thr Val Asp Val   Pro Asp Lys Thr Gln   Val Ala His Val
4945              4950                 4955

tta ccc cgc cta cga gaa   gtt gct aac acc cca   gac gtt gtg tta        35294
Leu Pro Arg Leu Arg Glu   Val Ala Asn Thr Pro   Asp Val Val Leu
4960              4965                 4970

aat gta tcc aat gta gat   acg cct gaa tcc agt   ccc act ttt tca        35339
Asn Val Ser Asn Val Asp   Thr Pro Glu Ser Ser   Pro Thr Phe Ser
4975              4980                 4985

cgg aac atg aat gta gga   agc agt ttg aaa gat   cgg aag cca ttt        35384
Arg Asn Met Asn Val Gly   Ser Ser Leu Lys Asp   Arg Lys Pro Phe
4990              4995                 5000

cta ttt gaa cag agt ggt   gat gtc aac atg gtt   gtc gaa aaa cta        35429
Leu Phe Glu Gln Ser Gly   Asp Val Asn Met Val   Val Glu Lys Leu
5005              5010                 5015

cta caa cat ggg cat gaa   att agc aat gga tac   gta caa aat gcg        35474
Leu Gln His Gly His Glu   Ile Ser Asn Gly Tyr   Val Gln Asn Ala
5020              5025                 5030

gtg ggt acg ttg gat act   gtt att acc ggt cat   aca aat gtt ccc        35519
Val Gly Thr Leu Asp Thr   Val Ile Thr Gly His   Thr Asn Val Pro
5035              5040                 5045

att tgg gta aca agg ccc   ttg gtt atg cca gac   gaa aag gat cca        35564
Ile Trp Val Thr Arg Pro   Leu Val Met Pro Asp   Glu Lys Asp Pro
5050              5055                 5060

ttg gag ctt ttt att aac   ctc acc att ttg cgt   tta acg gga ttt        35609
Leu Glu Leu Phe Ile Asn   Leu Thr Ile Leu Arg   Leu Thr Gly Phe
5065              5070                 5075

gtg gtg gaa aat gga aca   cgt aca cat cat ggt   gct aca agc gtt        35654
Val Val Glu Asn Gly Thr   Arg Thr His His Gly   Ala Thr Ser Val
5080              5085                 5090

gta tca gac ttt ata ggt   ccc ctt ggg gaa att   tta aca gga ttt        35699
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Val Ser Asp Phe Ile Gly  Pro Leu Gly Glu Ile  Leu Thr Gly Phe
5095               5100                5105

ccc tcc gcc gcg gaa ctt  ata cgc gtt aca agt  ttg ata tta aca    35744
Pro Ser Ala Ala Glu Leu  Ile Arg Val Thr Ser  Leu Ile Leu Thr
5110               5115                5120

aac atg ccg ggg gcg gaa  tat gct att aaa act  gtt ctc cgg aaa    35789
Asn Met Pro Gly Ala Glu  Tyr Ala Ile Lys Thr  Val Leu Arg Lys
5125               5130                5135

aaa tgt aca att ggc atg  ctc att atc gct aag  ttt ggt cta gtt    35834
Lys Cys Thr Ile Gly Met  Leu Ile Ile Ala Lys  Phe Gly Leu Val
5140               5145                5150

gcc atg cgg gtt cag gat  aca acc ggc gct tta  cat gcc gaa cta    35879
Ala Met Arg Val Gln Asp  Thr Thr Gly Ala Leu  His Ala Glu Leu
5155               5160                5165

gat gtg tta gaa gcg gat  cta gga ggt tcg tcg  ccc ata gac ctc    35924
Asp Val Leu Glu Ala Asp  Leu Gly Gly Ser Ser  Pro Ile Asp Leu
5170               5175                5180

tat tct aga ctg tcg aca  ggt ctt ata agt ata  cta aat tcg cct    35969
Tyr Ser Arg Leu Ser Thr  Gly Leu Ile Ser Ile  Leu Asn Ser Pro
5185               5190                5195

att att tct cat ccc gga  ctt ttt gcc gag ctt  att cca acc cgt    36014
Ile Ile Ser His Pro Gly  Leu Phe Ala Glu Leu  Ile Pro Thr Arg
5200               5205                5210

aca ggg tcc ctg tct gaa  cga ata cgt ctt ctt  tgt gaa tta gtc    36059
Thr Gly Ser Leu Ser Glu  Arg Ile Arg Leu Leu  Cys Glu Leu Val
5215               5220                5225

tcg gcc cgg gag aca cgc  tat atg cgt gaa cac  acc gcg ctt gtt    36104
Ser Ala Arg Glu Thr Arg  Tyr Met Arg Glu His  Thr Ala Leu Val
5230               5235                5240

tct agt gta aag gct tta  gag aat gca tta cgg  tct acc cgc aat    36149
Ser Ser Val Lys Ala Leu  Glu Asn Ala Leu Arg  Ser Thr Arg Asn
5245               5250                5255

aaa att gat gcc att caa  ata cca gaa gtt ccc  cag gaa ccc ccg    36194
Lys Ile Asp Ala Ile Gln  Ile Pro Glu Val Pro  Gln Glu Pro Pro
5260               5265                5270

gaa gaa acc gac att cca  ccc gaa gag tta att  cgg cgt gta tat    36239
Glu Glu Thr Asp Ile Pro  Pro Glu Glu Leu Ile  Arg Arg Val Tyr
5275               5280                5285

gag ata cga tcc gaa gtt  aca atg cta ttg acc  tcg gct gtt aca    36284
Glu Ile Arg Ser Glu Val  Thr Met Leu Leu Thr  Ser Ala Val Thr
5290               5295                5300

gaa tac ttc acc cgc gga  gtg tta tat agc aca  cgg gcc ttg atc    36329
Glu Tyr Phe Thr Arg Gly  Val Leu Tyr Ser Thr  Arg Ala Leu Ile
5305               5310                5315

gct gaa caa tcc cct agg  cgt ttt cgg gtc gcg  acc gca agt acg    36374
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Ala  Glu Gln Ser Pro Arg  Arg Phe Arg Val Ala  Thr Ala Ser Thr
5320             5325                 5330

gca  ccc att caa cgg ctt  tta gat tct ctt ccg  gaa ttc gac gct      36419
Ala  Pro Ile Gln Arg Leu  Leu Asp Ser Leu Pro  Glu Phe Asp Ala
5335             5340                 5345

aaa  tta acg gca atc ata  tcg tcc ctg tct ata  cac cct cct cct      36464
Lys  Leu Thr Ala Ile Ile  Ser Ser Leu Ser Ile  His Pro Pro Pro
5350             5355                 5360

gag  act ata caa aat ctc  ccc gtc gta tct ctg  tta aaa gag ctt      36509
Glu  Thr Ile Gln Asn Leu  Pro Val Val Ser Leu  Leu Lys Glu Leu
5365             5370                 5375

att  aaa gaa ggg gaa gat  tta aac aca gac acg  gct ctc gta tcg      36554
Ile  Lys Glu Gly Glu Asp  Leu Asn Thr Asp Thr  Ala Leu Val Ser
5380             5385                 5390

tgg  tta tct gta gtc ggg  gaa gct caa acc gca  ggt tac tta tcc      36599
Trp  Leu Ser Val Val Gly  Glu Ala Gln Thr Ala  Gly Tyr Leu Ser
5395             5400                 5405

aga  cga gag ttc gat gaa  tta tca cgt aca att  aaa acc att aat      36644
Arg  Arg Glu Phe Asp Glu  Leu Ser Arg Thr Ile  Lys Thr Ile Asn
5410             5415                 5420

aca  cgc gca acg caa cgg  gct tcc gcg gaa gca  gag ttg tct tgc      36689
Thr  Arg Ala Thr Gln Arg  Ala Ser Ala Glu Ala  Glu Leu Ser Cys
5425             5430                 5435

ttt  aat acg cta agc gcg  gcc gta gac caa gcc  gta aag gac tat      36734
Phe  Asn Thr Leu Ser Ala  Ala Val Asp Gln Ala  Val Lys Asp Tyr
5440             5445                 5450

gaa  aca tat aac aat ggt  gag gtc aag tat cct  gaa ata aca cgg      36779
Glu  Thr Tyr Asn Asn Gly  Glu Val Lys Tyr Pro  Glu Ile Thr Arg
5455             5460                 5465

gat  gat tta tta gca aca  att gta cgt gct aca  gac gat ttg gtg      36824
Asp  Asp Leu Leu Ala Thr  Ile Val Arg Ala Thr  Asp Asp Leu Val
5470             5475                 5480

cga  cag ata aaa att tta  agt gat cca atg atc  caa tcc ggt tta      36869
Arg  Gln Ile Lys Ile Leu  Ser Asp Pro Met Ile  Gln Ser Gly Leu
5485             5490                 5495

caa  cct tcg att aaa aga  cga ttg gaa aca agg  ctt aaa gag gtt      36914
Gln  Pro Ser Ile Lys Arg  Arg Leu Glu Thr Arg  Leu Lys Glu Val
5500             5505                 5510

cag  acg tat gca aac gag  gcc cga acc aca cag  gac aca ata aag      36959
Gln  Thr Tyr Ala Asn Glu  Ala Arg Thr Thr Gln  Asp Thr Ile Lys
5515             5520                 5525

agt  cga aaa cag gcg gca  tat aat aaa ctc ggg  ggg tta ctt cgc      37004
Ser  Arg Lys Gln Ala Ala  Tyr Asn Lys Leu Gly  Gly Leu Leu Arg
5530             5535                 5540

ccg  gta acc ggt ttt gtg  gga ctt agg gct gca  gta gat tta tta      37049
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Pro  Val Thr Gly Phe Val  Gly Leu Arg Ala Ala  Val Asp Leu Leu
5545                 5550                 5555

ccg  gaa ctt gct tct gag  tta gat gtc caa gga  gcc ctg gta aat      37094
Pro  Glu Leu Ala Ser Glu  Leu Asp Val Gln Gly  Ala Leu Val Asn
5560                 5565                 5570

ctc  agg acc aaa gtc tta  gag gcg ccg gta gag  atc cgt tct caa      37139
Leu  Arg Thr Lys Val Leu  Glu Ala Pro Val Glu  Ile Arg Ser Gln
5575                 5580                 5585

ctt  acg ggt gat ttc tgg  gcg tta ttt aac caa  tat cga gac att      37184
Leu  Thr Gly Asp Phe Trp  Ala Leu Phe Asn Gln  Tyr Arg Asp Ile
5590                 5595                 5600

tta  gaa cat ccc gga aac  gca cgc aca tct gtc  tta gga gga ctg      37229
Leu  Glu His Pro Gly Asn  Ala Arg Thr Ser Val  Leu Gly Gly Leu
5605                 5610                 5615

gga  gct tgt ttt aca gct  att atc gaa att gtg  ccg ata cct acg      37274
Gly  Ala Cys Phe Thr Ala  Ile Ile Glu Ile Val  Pro Ile Pro Thr
5620                 5625                 5630

gag  tat aga cca tca ttg  ctt gcg ttt ttt ggt  gac gtg gca gat      37319
Glu  Tyr Arg Pro Ser Leu  Leu Ala Phe Phe Gly  Asp Val Ala Asp
5635                 5640                 5645

gtg  ctt gca tcc gac atc  gcg acc gta tct act  aac ccg gaa agt      37364
Val  Leu Ala Ser Asp Ile  Ala Thr Val Ser Thr  Asn Pro Glu Ser
5650                 5655                 5660

gag  tcc gcc ata aac gct  gtt gtt gca act ctt  agt aaa gcg acg      37409
Glu  Ser Ala Ile Asn Ala  Val Val Ala Thr Leu  Ser Lys Ala Thr
5665                 5670                 5675

tta  gtt tca tct aca gtg  cca gcc tta tcc ttt  gtg ttg tcg tta      37454
Leu  Val Ser Ser Thr Val  Pro Ala Leu Ser Phe  Val Leu Ser Leu
5680                 5685                 5690

tat  aaa aaa tat cag gct  tta caa caa gaa att  acg aat acc cat      37499
Tyr  Lys Lys Tyr Gln Ala  Leu Gln Gln Glu Ile  Thr Asn Thr His
5695                 5700                 5705

aag  ttg act gaa tta caa  aaa caa ctt gga gat  gac ttc tcc acc      37544
Lys  Leu Thr Glu Leu Gln  Lys Gln Leu Gly Asp  Asp Phe Ser Thr
5710                 5715                 5720

cta  gct gtc tca tct gga  cac ttg aag ttt ata  tca tct tca aat      37589
Leu  Ala Val Ser Ser Gly  His Leu Lys Phe Ile  Ser Ser Ser Asn
5725                 5730                 5735

gta  gat gat tat gaa ata  aac gat gcg ata tta  tca ata caa aca      37634
Val  Asp Asp Tyr Glu Ile  Asn Asp Ala Ile Leu  Ser Ile Gln Thr
5740                 5745                 5750

aat  gtg cac gcc cta atg  gat acg gtt aaa ctt  gtt gaa gtt gaa      37679
Asn  Val His Ala Leu Met  Asp Thr Val Lys Leu  Val Glu Val Glu
5755                 5760                 5765

ctg  caa aag cta ccc ccc  cat tgt att gct ggg  aca tct acc tta      37724
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Leu  Gln Lys Leu Pro Pro  His Cys Ile Ala Gly  Thr Ser Thr Leu
5770              5775              5780

tct  cga gta gta aag gat  ctt cat aaa ctc gtc  aca atg gca cat  37769
Ser  Arg Val Val Lys Asp  Leu His Lys Leu Val  Thr Met Ala His
5785              5790              5795

gag  aag aag gaa cag gca  aaa gtg tta att acc  gat tgt gaa cgt  37814
Glu  Lys Lys Glu Gln Ala  Lys Val Leu Ile Thr  Asp Cys Glu Arg
5800              5805              5810

gca  cat aaa caa caa acg  act cgg gtt ttg tat  gag cgt tgg aca  37859
Ala  His Lys Gln Gln Thr  Thr Arg Val Leu Tyr  Glu Arg Trp Thr
5815              5820              5825

cgt  gat att ata gca tgt  ctg gag gca atg gaa  acg cgc cat ata  37904
Arg  Asp Ile Ile Ala Cys  Leu Glu Ala Met Glu  Thr Arg His Ile
5830              5835              5840

ttt  aac ggg aca gaa ctg  gca cgg ttg cga gat  atg gcc gct gcg  37949
Phe  Asn Gly Thr Glu Leu  Ala Arg Leu Arg Asp  Met Ala Ala Ala
5845              5850              5855

gga  ggg ttt gat ata cac  gca gtt tac cca caa  gca cgt cag gtt  37994
Gly  Gly Phe Asp Ile His  Ala Val Tyr Pro Gln  Ala Arg Gln Val
5860              5865              5870

gta  gcg gca tgt gaa act  aca gcc gtt acg gca  tta gat act gtg  38039
Val  Ala Ala Cys Glu Thr  Thr Ala Val Thr Ala  Leu Asp Thr Val
5875              5880              5885

ttt  cgc cac aat cca tat  acc ccc gaa aat aca  aat att cca cca  38084
Phe  Arg His Asn Pro Tyr  Thr Pro Glu Asn Thr  Asn Ile Pro Pro
5890              5895              5900

cct  ttg gct ttg tta aga  ggg tta aca tgg ttt  gat gat ttt tcg  38129
Pro  Leu Ala Leu Leu Arg  Gly Leu Thr Trp Phe  Asp Asp Phe Ser
5905              5910              5915

att  acg gct ccc gta ttc  acc gtt atg ttt cca  ggt gtt agt att  38174
Ile  Thr Ala Pro Val Phe  Thr Val Met Phe Pro  Gly Val Ser Ile
5920              5925              5930

gag  gga ctc ctt ctg ctt  atg cgt att cgc gcg  gtt gtg tta tta  38219
Glu  Gly Leu Leu Leu Leu  Met Arg Ile Arg Ala  Val Val Leu Leu
5935              5940              5945

tcc  gcc gat acg tct att  aat gga ata cct aac  tac cga gat atg  38264
Ser  Ala Asp Thr Ser Ile  Asn Gly Ile Pro Asn  Tyr Arg Asp Met
5950              5955              5960

ata  tta cga acc tcg ggg  gat cta tta caa ata  ccc gca ttg gct  38309
Ile  Leu Arg Thr Ser Gly  Asp Leu Leu Gln Ile  Pro Ala Leu Ala
5965              5970              5975

ggg  tat gtt gat ttt tac  aca cgg tct tat gat  cag ttt ata acc  38354
Gly  Tyr Val Asp Phe Tyr  Thr Arg Ser Tyr Asp  Gln Phe Ile Thr
5980              5985              5990

gaa  agt gta acg tta agt  gaa ctt aga gca gac  atc aga cag gct  38399
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Glu  Ser Val Thr Leu Ser  Glu Leu Arg Ala Asp  Ile Arg Gln Ala
5995                6000                6005

gcc  ggg gct aaa ctt aca  gaa gca aat aag gct  ttg gag gaa gta    38444
Ala  Gly Ala Lys Leu Thr  Glu Ala Asn Lys Ala  Leu Glu Glu Val
6010                6015                6020

act  cat gtt cgg gca cac  gaa acg gct aaa ctt  gca ctt aaa gaa    38489
Thr  His Val Arg Ala His  Glu Thr Ala Lys Leu  Ala Leu Lys Glu
6025                6030                6035

ggt  gtc ttc att aca tta  cca agc gaa ggt tta  ttg att cgg gct    38534
Gly  Val Phe Ile Thr Leu  Pro Ser Glu Gly Leu  Leu Ile Arg Ala
6040                6045                6050

ata  gag tat ttt aca act  ttc gat cat aaa cga  ttt ata gga acg    38579
Ile  Glu Tyr Phe Thr Thr  Phe Asp His Lys Arg  Phe Ile Gly Thr
6055                6060                6065

gca  tat gaa aga gtt tta  caa aca atg gta gac  cgc gat cta aag    38624
Ala  Tyr Glu Arg Val Leu  Gln Thr Met Val Asp  Arg Asp Leu Lys
6070                6075                6080

gag  gcc aac gca gag ctt  gca cag ttt cgt atg  gtg tgt cag gca    38669
Glu  Ala Asn Ala Glu Leu  Ala Gln Phe Arg Met  Val Cys Gln Ala
6085                6090                6095

aca  aag aac cgt gca ata  caa att tta caa aac  att gtt gat acg    38714
Thr  Lys Asn Arg Ala Ile  Gln Ile Leu Gln Asn  Ile Val Asp Thr
6100                6105                6110

gcc  aat gcc act gag caa  caa gaa gac gtg gat  ttc act aac ctg    38759
Ala  Asn Ala Thr Glu Gln  Gln Glu Asp Val Asp  Phe Thr Asn Leu
6115                6120                6125

aag  acg tta tta aaa cta  acc ccc cct ccc aaa  aca att gca ttg    38804
Lys  Thr Leu Leu Lys Leu  Thr Pro Pro Pro Lys  Thr Ile Ala Leu
6130                6135                6140

gcc  att gat aga tct act  tcc gtt cag gac att  gtc acg cag ttt    38849
Ala  Ile Asp Arg Ser Thr  Ser Val Gln Asp Ile  Val Thr Gln Phe
6145                6150                6155

gca  ttg ctg tta ggg cgt  ctg gaa gaa gaa act  ggt acg ttg gac    38894
Ala  Leu Leu Leu Gly Arg  Leu Glu Glu Glu Thr  Gly Thr Leu Asp
6160                6165                6170

att  cag gcg gtt gac tgg  atg tac caa gct cgc  aat att att gac    38939
Ile  Gln Ala Val Asp Trp  Met Tyr Gln Ala Arg  Asn Ile Ile Asp
6175                6180                6185

tcc  cat cca cta agt gtg  cgt ata gac ggt acc  ggc ccc ctg cat    38984
Ser  His Pro Leu Ser Val  Arg Ile Asp Gly Thr  Gly Pro Leu His
6190                6195                6200

act  tat aaa gat agg gtg  gat aaa ctt tat gcg  tta cga act aaa    39029
Thr  Tyr Lys Asp Arg Val  Asp Lys Leu Tyr Ala  Leu Arg Thr Lys
6205                6210                6215

tta  gat ctc cta cga cga  cga ata gaa acc ggt  gag gtt acg tgg    39074
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Leu  Asp Leu Leu Arg Arg  Arg Ile Glu Thr Gly  Glu Val Thr Trp
6220                       6225              6230

gac  gat gca tgg aca aca  ttt aaa aga gaa acg  ggg gat atg ttg     39119
Asp  Asp Ala Trp Thr Thr  Phe Lys Arg Glu Thr  Gly Asp Met Leu
6235                       6240              6245

gca  tcg ggg gac acg tac  gct act tcc gta gat  agt ata aag gca     39164
Ala  Ser Gly Asp Thr Tyr  Ala Thr Ser Val Asp  Ser Ile Lys Ala
6250                       6255              6260

ctc  cag gca tcg gcg tct  gtg gtt gac atg ctt  tgt tcc gaa ccc     39209
Leu  Gln Ala Ser Ala Ser  Val Val Asp Met Leu  Cys Ser Glu Pro
6265                       6270              6275

gaa  ttt ttt tta ttg cct  gtg gaa acg aaa aac  cgt ctc caa aaa     39254
Glu  Phe Phe Leu Leu Pro  Val Glu Thr Lys Asn  Arg Leu Gln Lys
6280                       6285              6290

aag  caa cag gaa cgt aaa  acg gcg ttg gat gtt  gtg ttg caa aaa     39299
Lys  Gln Gln Glu Arg Lys  Thr Ala Leu Asp Val  Val Leu Gln Lys
6295                       6300              6305

caa  aga cag ttt gaa gag  acc gcg tct cgc tta  cga gct tta att     39344
Gln  Arg Gln Phe Glu Glu  Thr Ala Ser Arg Leu  Arg Ala Leu Ile
6310                       6315              6320

gaa  cgt att cca acg gag  agt gac cat gac gtt  ctt cgt atg tta     39389
Glu  Arg Ile Pro Thr Glu  Ser Asp His Asp Val  Leu Arg Met Leu
6325                       6330              6335

tta  cgt gat ttc gat caa  ttt aca cat ttg cct  ata tgg ata aaa     39434
Leu  Arg Asp Phe Asp Gln  Phe Thr His Leu Pro  Ile Trp Ile Lys
6340                       6345              6350

aca  cag tat atg aca ttt  cga aat tta ctc atg  gta cgg tta ggc     39479
Thr  Gln Tyr Met Thr Phe  Arg Asn Leu Leu Met  Val Arg Leu Gly
6355                       6360              6365

ttg  tat gca agt tat gct  gag att ttt cca ccc  gcg tct cca aac     39524
Leu  Tyr Ala Ser Tyr Ala  Glu Ile Phe Pro Pro  Ala Ser Pro Asn
6370                       6375              6380

gga  gta ttt gct cct att  ccc gcc atg tcg ggt  gta tgt cta gaa     39569
Gly  Val Phe Ala Pro Ile  Pro Ala Met Ser Gly  Val Cys Leu Glu
6385                       6390              6395

gac  caa tcc cga tgc att  cgc gcg cgg gtg gcc  gcg ttt atg ggg     39614
Asp  Gln Ser Arg Cys Ile  Arg Ala Arg Val Ala  Ala Phe Met Gly
6400                       6405              6410

gag  gcg tct gtg gtg caa  acg ttt agg gaa gcc  aga tct tct ata     39659
Glu  Ala Ser Val Val Gln  Thr Phe Arg Glu Ala  Arg Ser Ser Ile
6415                       6420              6425

gac  gct ttg ttt gga aaa  aat tta acc ttt tac  ttg gat act gat     39704
Asp  Ala Leu Phe Gly Lys  Asn Leu Thr Phe Tyr  Leu Asp Thr Asp
6430                       6435              6440

ggg  gtt cca ctt cga tat  aga gtg tgt tat aaa  tca gtt ggg gtt     39749
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Gly Val Pro Leu Arg Tyr  Arg Val Cys Tyr Lys  Ser Val Gly Val
6445               6450                6455

aaa ctt gga acc atg cta  tgc agt cag ggt gga  tta tct tta cga      39794
Lys Leu Gly Thr Met Leu  Cys Ser Gln Gly Gly  Leu Ser Leu Arg
6460               6465                6470

ccg gca ctt ccc gat gaa  ggt att gtg gaa gaa  act aca cta tcg      39839
Pro Ala Leu Pro Asp Glu  Gly Ile Val Glu Glu  Thr Thr Leu Ser
6475               6480                6485

gca tta cgc gtg gcc aat  gag gtc aat gag cta  cgc att gaa tac      39884
Ala Leu Arg Val Ala Asn  Glu Val Asn Glu Leu  Arg Ile Glu Tyr
6490               6495                6500

gaa tcc gct ata aaa tcc  ggg ttt tct gcc ttt  tcc acc ttt gtt      39929
Glu Ser Ala Ile Lys Ser  Gly Phe Ser Ala Phe  Ser Thr Phe Val
6505               6510                6515

agg cat cgc cac gcc gaa  tgg ggt aaa acc aac  gca cgc aga gcc      39974
Arg His Arg His Ala Glu  Trp Gly Lys Thr Asn  Ala Arg Arg Ala
6520               6525                6530

att gca gag ata tac gcc  ggc ctt ata aca aca  aca ttg aca cga      40019
Ile Ala Glu Ile Tyr Ala  Gly Leu Ile Thr Thr  Thr Leu Thr Arg
6535               6540                6545

caa tac ggg gtt cat tgg  gac aag ctt att tat  tct ttt gaa aaa      40064
Gln Tyr Gly Val His Trp  Asp Lys Leu Ile Tyr  Ser Phe Glu Lys
6550               6555                6560

cac cac cta act tct gta  atg ggc aat gga cta  act aaa cca atc      40109
His His Leu Thr Ser Val  Met Gly Asn Gly Leu  Thr Lys Pro Ile
6565               6570                6575

cag aga agg ggt gat gta  cgc gta tta gag tta  acc cta tct gat      40154
Gln Arg Arg Gly Asp Val  Arg Val Leu Glu Leu  Thr Leu Ser Asp
6580               6585                6590

att gta act att ttg gtt  gcc aca acc ccg gta  cat ctt ctc aat      40199
Ile Val Thr Ile Leu Val  Ala Thr Thr Pro Val  His Leu Leu Asn
6595               6600                6605

ttt gct aga ttg gat tta  att aaa cag cat gag  tat atg gcc cgt      40244
Phe Ala Arg Leu Asp Leu  Ile Lys Gln His Glu  Tyr Met Ala Arg
6610               6615                6620

acc ctc aga ccc gta atc  gag gcc gca ttt aga  ggt cgt tta ctc      40289
Thr Leu Arg Pro Val Ile  Glu Ala Ala Phe Arg  Gly Arg Leu Leu
6625               6630                6635

gtt cgc tca ttg gat gga  gac ccg aaa ggc aat  gcc cgg gcc ttt      40334
Val Arg Ser Leu Asp Gly  Asp Pro Lys Gly Asn  Ala Arg Ala Phe
6640               6645                6650

ttt aat gcc gcc cca tcc  aaa cat aaa ctc ccg  tta gct ctt gga      40379
Phe Asn Ala Ala Pro Ser  Lys His Lys Leu Pro  Leu Ala Leu Gly
6655               6660                6665

tca aac caa gat cct acc  ggc ggg aga ata ttt  gca ttt cgg atg      40424
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Ser  Asn Gln Asp Pro Thr  Gly Gly Arg Ile Phe  Ala Phe Arg Met
6670                6675               6680

gca  gat tgg aaa ctt gtt  aaa atg cca cag aaa  ata acg gat cct       40469
Ala  Asp Trp Lys Leu Val  Lys Met Pro Gln Lys  Ile Thr Asp Pro
6685                6690               6695

ttt  gcg cca tgg caa ctt  tcc ccc ccc ccc ggg  gta aag gcc aat       40514
Phe  Ala Pro Trp Gln Leu  Ser Pro Pro Pro Gly  Val Lys Ala Asn
6700                6705               6710

gtc  gat gca gtt acc cgt  ata atg gca aca gat  cgt ctt gcg acc       40559
Val  Asp Ala Val Thr Arg  Ile Met Ala Thr Asp  Arg Leu Ala Thr
6715                6720               6725

att  act gta ctt ggg cgc  atg tgt ctc ccg cca  att tcc tta gtg       40604
Ile  Thr Val Leu Gly Arg  Met Cys Leu Pro Pro  Ile Ser Leu Val
6730                6735               6740

tca  atg tgg aat acg ctg  caa ccg gag gaa ttc  gca tac aga aca       40649
Ser  Met Trp Asn Thr Leu  Gln Pro Glu Glu Phe  Ala Tyr Arg Thr
6745                6750               6755

caa  gat gat gtg gac att  ata gtt gat gcg aga  ctg gat ttg tca       40694
Gln  Asp Asp Val Asp Ile  Ile Val Asp Ala Arg  Leu Asp Leu Ser
6760                6765               6770

tcc  acg ctt aat gca aga  ttt gat acc gct ccc  agc aat acc acg       40739
Ser  Thr Leu Asn Ala Arg  Phe Asp Thr Ala Pro  Ser Asn Thr Thr
6775                6780               6785

tta  gag tgg aat aca gac  cgt aaa gta att aca  gat gct tat att       40784
Leu  Glu Trp Asn Thr Asp  Arg Lys Val Ile Thr  Asp Ala Tyr Ile
6790                6795               6800

caa  acc ggg gca acg aca  gtt ttt aca gta acg  ggg gcg gca cca       40829
Gln  Thr Gly Ala Thr Thr  Val Phe Thr Val Thr  Gly Ala Ala Pro
6805                6810               6815

act  cac gtt tct aat gta  aca gcg ttt gac ata  gca act acg gct       40874
Thr  His Val Ser Asn Val  Thr Ala Phe Asp Ile  Ala Thr Thr Ala
6820                6825               6830

att  tta ttt ggg gct cct  ttg gtt att gcc atg  gaa ctt aca tcc       40919
Ile  Leu Phe Gly Ala Pro  Leu Val Ile Ala Met  Glu Leu Thr Ser
6835                6840               6845

gtt  ttt tca caa aat tcc  gga ctt act ttg ggg  tta aaa tta ttc       40964
Val  Phe Ser Gln Asn Ser  Gly Leu Thr Leu Gly  Leu Lys Leu Phe
6850                6855               6860

gat  tcc cgg cat atg gct  aca gat tcg ggt ata  tcc tca gcc gta       41009
Asp  Ser Arg His Met Ala  Thr Asp Ser Gly Ile  Ser Ser Ala Val
6865                6870               6875

tct  ccc gat att gtt tct  tgg ggg tta cgt tta  ctg cat atg gat       41054
Ser  Pro Asp Ile Val Ser  Trp Gly Leu Arg Leu  Leu His Met Asp
6880                6885               6890

cct  cac cca att gaa aat  gca tgt tta att gtc  caa cta gaa aaa       41099
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Pro His Pro Ile Glu Asn   Ala Cys Leu Ile Val   Gln Leu Glu Lys
6895          6900              6905

ctg tcc gcg ctc att gca   aac aaa cct ctt aca   aac aat ccc ccg   41144
Leu Ser Ala Leu Ile Ala   Asn Lys Pro Leu Thr   Asn Asn Pro Pro
6910          6915              6920

tgt tta ctg cta ttg gac   gaa cat atg aat ccc   tct tat gtt tta   41189
Cys Leu Leu Leu Leu Asp   Glu His Met Asn Pro   Ser Tyr Val Leu
6925          6930              6935

tgg gaa cga aaa gac tcg   att cca gct ccg gat   tat gtg gtc ttt   41234
Trp Glu Arg Lys Asp Ser   Ile Pro Ala Pro Asp   Tyr Val Val Phe
6940          6945              6950

tgg ggg cca gaa tct ctt   att gat ttg ccg tac   atc gac tcc gat   41279
Trp Gly Pro Glu Ser Leu   Ile Asp Leu Pro Tyr   Ile Asp Ser Asp
6955          6960              6965

gag gac tct ttc ccc tcg   tgt ccc gat gat cca   ttt tac tcg caa   41324
Glu Asp Ser Phe Pro Ser   Cys Pro Asp Asp Pro   Phe Tyr Ser Gln
6970          6975              6980

att att gcc ggt tat gcg   ccc caa ggc ccc cca   aac ctc gac aca   41369
Ile Ile Ala Gly Tyr Ala   Pro Gln Gly Pro Pro   Asn Leu Asp Thr
6985          6990              6995

act gat ttt tac cca acg   gag cca cta ttt aag   tct ccc gtt caa   41414
Thr Asp Phe Tyr Pro Thr   Glu Pro Leu Phe Lys   Ser Pro Val Gln
7000          7005              7010

gtt gtt aga agt tcc aaa   tgt aaa aaa atg ccc   gtc cgg ccc gcg   41459
Val Val Arg Ser Ser Lys   Cys Lys Lys Met Pro   Val Arg Pro Ala
7015          7020              7025

cag ccc gcg cag ccc gcg   cag ccc gcg cag ccc   gcg cag acc gtc   41504
Gln Pro Ala Gln Pro Ala   Gln Pro Ala Gln Pro   Ala Gln Thr Val
7030          7035              7040

cag ccc gcg cag ccc ata   gaa ccg ggc aca caa   ata gtg gta caa   41549
Gln Pro Ala Gln Pro Ile   Glu Pro Gly Thr Gln   Ile Val Val Gln
7045          7050              7055

aat ttt aag aaa ccc caa   agc gta aaa aca acc   ctt agc caa aaa   41594
Asn Phe Lys Lys Pro Gln   Ser Val Lys Thr Thr   Leu Ser Gln Lys
7060          7065              7070

gat att ccc ttg tat gtg   gaa acc gaa tca gaa   acg gct gtg ctt   41639
Asp Ile Pro Leu Tyr Val   Glu Thr Glu Ser Glu   Thr Ala Val Leu
7075          7080              7085

ata cct aag caa tta acc   acc tcc att aaa aca   acc gtt tgt aaa   41684
Ile Pro Lys Gln Leu Thr   Thr Ser Ile Lys Thr   Thr Val Cys Lys
7090          7095              7100

agt att acc cca cca aat   aac caa ttg tcg gat   tgg aaa aat aat   41729
Ser Ile Thr Pro Pro Asn   Asn Gln Leu Ser Asp   Trp Lys Asn Asn
7105          7110              7115

cca cag caa aac caa acg   tta aac caa gcg ttc   agt aaa cca ata   41774
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Pro Gln Gln Asn Gln Thr  Leu Asn Gln Ala Phe  Ser Lys Pro Ile
7120              7125              7130

ctt gag att acc tcc att  ccg aca gat gac tcg  ata tct tac cgg          41819
Leu Glu Ile Thr Ser Ile  Pro Thr Asp Asp Ser  Ile Ser Tyr Arg
7135              7140              7145

act tgg att gaa aaa tca  aat caa aca caa aaa  cgg cat caa aat          41864
Thr Trp Ile Glu Lys Ser  Asn Gln Thr Gln Lys  Arg His Gln Asn
7150              7155              7160

gac cct cga atg tat aac  tcc aaa aca gta ttc  cac cct gta aat          41909
Asp Pro Arg Met Tyr Asn  Ser Lys Thr Val Phe  His Pro Val Asn
7165              7170              7175

aac caa tta cct tct tgg  gtt gac acg gca gcc  gat gcc ccc caa          41954
Asn Gln Leu Pro Ser Trp  Val Asp Thr Ala Ala  Asp Ala Pro Gln
7180              7185              7190

acg gac cta ttg aca aac  tat aaa aca aga cag  ccg tcg cca aac          41999
Thr Asp Leu Leu Thr Asn  Tyr Lys Thr Arg Gln  Pro Ser Pro Asn
7195              7200              7205

ttt ccg cgg gac gta cac  aca tgg ggc gta tct  tct aac ccg ttt          42044
Phe Pro Arg Asp Val His  Thr Trp Gly Val Ser  Ser Asn Pro Phe
7210              7215              7220

aac tca ccg aac aga gac  cta tat caa agt gat  ttt agt gaa cct          42089
Asn Ser Pro Asn Arg Asp  Leu Tyr Gln Ser Asp  Phe Ser Glu Pro
7225              7230              7235

tct gac ggc tat agc agt  gag agt gaa aat tct  atc gta cta agt          42134
Ser Asp Gly Tyr Ser Ser  Glu Ser Glu Asn Ser  Ile Val Leu Ser
7240              7245              7250

ctc gac gaa cat cgg tca  tgt cgc gtt cct agg  cac gta cgc gtt          42179
Leu Asp Glu His Arg Ser  Cys Arg Val Pro Arg  His Val Arg Val
7255              7260              7265

gtt aat gcc gat gta gtc  acc ggt cga cgt tat  gtc cga ggg acc          42224
Val Asn Ala Asp Val Val  Thr Gly Arg Arg Tyr  Val Arg Gly Thr
7270              7275              7280

gcc ttg gga gca ctg gca  ctg tta agc cag gca  tgt cgg cgt atg          42269
Ala Leu Gly Ala Leu Ala  Leu Leu Ser Gln Ala  Cys Arg Arg Met
7285              7290              7295

atc gac aac gtt aga tat  aca cgt aaa ctt tta  atg gac cac acg          42314
Ile Asp Asn Val Arg Tyr  Thr Arg Lys Leu Leu  Met Asp His Thr
7300              7305              7310

gaa gat ata ttt caa ggc  ctg ggg tat gtt aaa  ttg tta tta gat          42359
Glu Asp Ile Phe Gln Gly  Leu Gly Tyr Val Lys  Leu Leu Leu Asp
7315              7320              7325

gga aca tat ata taa agtagcgcct attaaagaaa aaaaaaaaac aacgattatt       42414
Gly Thr Tyr Ile
7330

ttctgtgtat ttttatttac accctacgac ttcttgaagc gtttccagat tgtcccgtgt      42474
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gtgacaaggt ctgtccctta cccccctggg gggtattttg ggttggggc ggggtagact     42534

gtggcacgcc ttgggccgcg ggcggtgatc cggttgttgg ctggacagtg cttgactgtg     42594

ctccctgttg cggttgttgt ccagaagacc ccgacaccac gtgttgctgt tgtccaacgg     42654

atgccgacgt cgtttgaggt gggggtgtt gcggggatga tcccgaaaac gccaacgcgg      42714

cgggctgttg taaagcagac tgatcggcgc tctgtgtttt ttgcggcaat atagtaggcc     42774

ccgagattcc caaactcatg gatggatttg ggggttgtgg tcgtataata cgcgggttaa     42834

acgtacgttt taagccaacc gttggtctta accatgtcat agggtcagtc tcggcaaaca     42894

tggccgttcg gcgtatcgta tttgcattat ggttagcgcg tgcacgcgcg gcactggccg     42954

cggctcccac ggtgtaaatg cttctggcat cagcgatgtc cacacggtga ccaggttgca     43014

aaggtccact ggcgtttaaa agtcgtatta aagcaacggg ggtgtaagcc gcaattgctt     43074

ccaccgaaaa tgtggtgggg ttgctgggat caaagactac acgagacgat gcgggttgtg     43134

tcatcgttta ttagtttacg ggacaatcga taacagcata cacgtacatc tgcgcaggat     43194

atgtacggaa aggcaattta tttccagaaa agcaccgccc ctaatacaac taccagtaca     43254

attacaatga acaggcata tgtcacgtta gctacgggta gagcaagttt ccagacacgc      43314

gtagtttggg tatcgggtaa cgcaggttta atgtcacttt gcatttgaac agacgtgttt     43374

ggacttccgt tctcgggtgg ggatctgaat gaaggccgcc agcgtatata ttcatccaaa     43434

ttattgccag tttccttata catgtatgca tccgtggcgc gggccataag tttaatggtg     43494

cgagatggat cttccggtcc cataaaacga aaggataact gaacatatgg cattcgcaca     43554

aagcagttca cccacattaa agcctggaga ggtcggcggt caatacccc acctcgttta      43614

attgattcca aagcagatag gttgataccg gtacttaacg ttgaactaag aatcacgtta     43674

ttactgtcaa tggacacttc agccactggt gcgttagtcg gacgaaaaaa aaaaccttga     43734

aatagcacag acacccccgt attttgaatt tttatgtaag ggtcacaatc tacttgcgcc     43794

caattcgcca ttaaacgcat aatatactct accggaaagg cttcggatac gttgtcttcg     43854

ccgttaaact gaaaaacaca acgggcgggg gggcgttgtg gatcaaatat tggaagatcc     43914

ccatcgcaac attgaagagc gcttggtacc accaaccgaa tacgttgtaa aagattatct     43974

ccgcaacccc tcctgcgttc actccgtaca tacgttctcc gtgacatatt gatctaaggt     44034

tgcaaaccaa ggcacacgcg tgaagtattt agaccattta tcgtgggata taggaggagt     44094

ttggagtgat ccacccctg acgacttatt aatgcgttta ttttcccat gtattaagca      44154

tccttcaata tttcatgcaa atctagaaat ttggccatga ctcccgcaaa gcgttcacgg     44214

cgacgggtca cgctggcact atgttcacat ggaacaacat aagcagattt ttctgaatcg     44274
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ttactttctt tatgtttaa aacggacgcc aggcgactgg taaatgatat ataatttaat   44334

tgagcgtcag ttgtaggtag aattgcttct atttccgggg gaattaaatt ttcaaaccaa   44394

acggaaagag taaaggtgct atcagcagga aaatactttg actccagtgc atcgatattt   44454

aatagattaa catcggtgtc tgtaattaaa tcgcggccc tcatcccaga g atg gat   44511
                                                        Met Asp
                                                            7335

cgg gta gaa tca gaa gaa ccc atg gat gga ttc gaa tcg ccc gta   44556
Arg Val Glu Ser Glu Glu Pro Met Asp Gly Phe Glu Ser Pro Val
            7340   7345   7350

ttc tcc gaa aat aca tct tct aat tcc gga tgg tgt tcc gac gca   44601
Phe Ser Glu Asn Thr Ser Ser Asn Ser Gly Trp Cys Ser Asp Ala
            7355   7360   7365

ttt tcc gat tcg tac atc gct tat aat cca gcc ctt ctg cta aaa   44646
Phe Ser Asp Ser Tyr Ile Ala Tyr Asn Pro Ala Leu Leu Leu Lys
            7370   7375   7380

aac gat ttg tta ttt tca gaa ttg tta ttt gcc tcc cac tta ata   44691
Asn Asp Leu Leu Phe Ser Glu Leu Leu Phe Ala Ser His Leu Ile
            7385   7390   7395

aat gtt ccc cgt gca ata gaa aac aac gtc act tat gag gcc tct   44736
Asn Val Pro Arg Ala Ile Glu Asn Asn Val Thr Tyr Glu Ala Ser
            7400   7405   7410

tcg gcg gta ggt gtg gat aat gaa atg acc tca agt acc act gaa   44781
Ser Ala Val Gly Val Asp Asn Glu Met Thr Ser Ser Thr Thr Glu
            7415   7420   7425

ttt ata gaa gaa att gga gac gtt ttg gcg tta gac aga gcc tgt   44826
Phe Ile Glu Glu Ile Gly Asp Val Leu Ala Leu Asp Arg Ala Cys
            7430   7435   7440

ttg gtc tgc aga acg ctt gat ttg tat aaa cgt aaa ttt gga ctg   44871
Leu Val Cys Arg Thr Leu Asp Leu Tyr Lys Arg Lys Phe Gly Leu
            7445   7450   7455

aca ccg gaa tgg gtt gcg gac tac gcc atg tta tgt atg aaa agt   44916
Thr Pro Glu Trp Val Ala Asp Tyr Ala Met Leu Cys Met Lys Ser
            7460   7465   7470

ctg gca tcc ccg ccc tgt gca gtt gtc act ttt agc gct gcc ttt   44961
Leu Ala Ser Pro Pro Cys Ala Val Val Thr Phe Ser Ala Ala Phe
            7475   7480   7485

gaa ttt gtg tat ctt atg gat cgt tac tac ctg tgc cgt tat aac   45006
Glu Phe Val Tyr Leu Met Asp Arg Tyr Tyr Leu Cys Arg Tyr Asn
            7490   7495   7500

gtt act ttg gtt ggg tcc ttt gcc agg cgc acg ctt tcc ctg tta   45051
Val Thr Leu Val Gly Ser Phe Ala Arg Arg Thr Leu Ser Leu Leu
            7505   7510   7515

gat ata caa aga cat ttt ttt ttg cat gta tgt ttt cgt acc gat   45096

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Asp Ile Gln Arg His  Phe Phe Leu His Val  Cys Phe Arg Thr Asp
            7520               7525                   7530

gga ggg tta cca ggt  ata cga ccg ccc ccc  ggt aag gaa atg gcc      45141
Gly Gly Leu Pro Gly  Ile Arg Pro Pro Pro  Gly Lys Glu Met Ala
            7535               7540                   7545

aac aaa gta aga tat  tcc aat tac tcc ttt  ttt gta cag gcg gta      45186
Asn Lys Val Arg Tyr  Ser Asn Tyr Ser Phe  Phe Val Gln Ala Val
            7550               7555                   7560

gtt agg gct gca tta  cta tcg atc agc acg  tct cgt tta gac gaa      45231
Val Arg Ala Ala Leu  Leu Ser Ile Ser Thr  Ser Arg Leu Asp Glu
            7565               7570                   7575

acc gaa acg cgt aag  tca ttt tac ttt aat  cag gac gga ctg act      45276
Thr Glu Thr Arg Lys  Ser Phe Tyr Phe Asn  Gln Asp Gly Leu Thr
            7580               7585                   7590

gga ggc cct caa cct  tta gcg gcc gcc ttg  gct aat tgg aaa gat      45321
Gly Gly Pro Gln Pro  Leu Ala Ala Ala Leu  Ala Asn Trp Lys Asp
            7595               7600                   7605

tgc gcg cgg atg gtt  gac tgt tca tca tcg  gaa cat cgc aca agt      45366
Cys Ala Arg Met Val  Asp Cys Ser Ser Ser  Glu His Arg Thr Ser
            7610               7615                   7620

ggg atg att acc tgc  gcg gaa cgt gca tta  aaa gag gat ata gag      45411
Gly Met Ile Thr Cys  Ala Glu Arg Ala Leu  Lys Glu Asp Ile Glu
            7625               7630                   7635

ttt gaa gat ata tta  ata gac aaa ctt aaa  aaa tcg tct tac gta      45456
Phe Glu Asp Ile Leu  Ile Asp Lys Leu Lys  Lys Ser Ser Tyr Val
            7640               7645                   7650

gaa gca gct tgg ggt  tac gca gac ttg gct  tta tta tta ctg agt      45501
Glu Ala Ala Trp Gly  Tyr Ala Asp Leu Ala  Leu Leu Leu Leu Ser
            7655               7660                   7665

ggg gtt gct act tgg  aat gta gac gag cgt  aca aat tgt gct ata      45546
Gly Val Ala Thr Trp  Asn Val Asp Glu Arg  Thr Asn Cys Ala Ile
            7670               7675                   7680

gaa act cgc gtt gga  tgt gtt aaa tca tac  tgg cag gcg aac cgg      45591
Glu Thr Arg Val Gly  Cys Val Lys Ser Tyr  Trp Gln Ala Asn Arg
            7685               7690                   7695

att gaa aac tcc agg  gac gtt cca aaa caa  ttt tcc aaa ttt acg      45636
Ile Glu Asn Ser Arg  Asp Val Pro Lys Gln  Phe Ser Lys Phe Thr
            7700               7705                   7710

agc gag gat gcc tgt  ccc gaa gta gca ttt  ggg cct att ttg tta      45681
Ser Glu Asp Ala Cys  Pro Glu Val Ala Phe  Gly Pro Ile Leu Leu
            7715               7720                   7725

act acc tta aaa aac  gca aag tgc cgt ggt  cgc acg aat acc gaa      45726
Thr Thr Leu Lys Asn  Ala Lys Cys Arg Gly  Arg Thr Asn Thr Glu
            7730               7735                   7740

tgc atg tta tgt tgt  tta tta acc ata ggg  cac tat tgg atc gct      45771
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Cys Met Leu Cys Cys  Leu Leu Thr Ile Gly  His Tyr Trp Ile Ala
             7745              7750             7755

ttg cgg cag ttt aaa  agg gat ata tta gca  tac tca gca aat aac        45816
Leu Arg Gln Phe Lys  Arg Asp Ile Leu Ala  Tyr Ser Ala Asn Asn
             7760              7765             7770

aca agt tta ttt gac  tgt atc gaa cct gta  atc aat gca tgg agc        45861
Thr Ser Leu Phe Asp  Cys Ile Glu Pro Val  Ile Asn Ala Trp Ser
             7775              7780             7785

cta gat aac ccc att  aaa ctt aaa ttt cca  ttt aat gat gag ggt        45906
Leu Asp Asn Pro Ile  Lys Leu Lys Phe Pro  Phe Asn Asp Glu Gly
             7790              7795             7800

cga ttc ata acc att  gta aaa gca gca ggt  tcc gag gcc gta tat        45951
Arg Phe Ile Thr Ile  Val Lys Ala Ala Gly  Ser Glu Ala Val Tyr
             7805              7810             7815

aaa cat tta ttt tgc  gat ctc cta tgc gct  ctc tcg gaa tta cag        45996
Lys His Leu Phe Cys  Asp Leu Leu Cys Ala  Leu Ser Glu Leu Gln
             7820              7825             7830

aca aac cct aaa att  tta ttt gcc cat cct  aca acc gcg gat aag        46041
Thr Asn Pro Lys Ile  Leu Phe Ala His Pro  Thr Thr Ala Asp Lys
             7835              7840             7845

gaa gtg ttg gag tta  tat aaa gcc caa ctg  gct gca caa aac aga        46086
Glu Val Leu Glu Leu  Tyr Lys Ala Gln Leu  Ala Ala Gln Asn Arg
             7850              7855             7860

ttt gaa ggt cgt gta  tgt gct ggc ctg tgg  aca ttg gcg tat gca        46131
Phe Glu Gly Arg Val  Cys Ala Gly Leu Trp  Thr Leu Ala Tyr Ala
             7865              7870             7875

ttt aaa gcc tac cag  att ttt cca cgc aaa  cca acc gcc aat gcc        46176
Phe Lys Ala Tyr Gln  Ile Phe Pro Arg Lys  Pro Thr Ala Asn Ala
             7880              7885             7890

gca ttc ata cga gat  gga gga ctt atg ctt  cga cga cat gca ata        46221
Ala Phe Ile Arg Asp  Gly Gly Leu Met Leu  Arg Arg His Ala Ile
             7895              7900             7905

tcg ctg gtc tcc ctc  gaa cac acc cta tcg  aag tat gtc tag        46263
Ser Leu Val Ser Leu  Glu His Thr Leu Ser  Lys Tyr Val
             7910              7915

gcgatataaa tccgtatctc ggagcgggcc ttcgatgcgt gtacgctcca gaacgccatg        46323

ccgccgtcaa accattcgag gaaaacttat gtcaaaggag cggtctgtgt accgccatta        46383

ttttaattac atcgcaaggt cccccccaga agaactagct accgttagag gcttaatcgt        46443

gccaattatt aagacgaccc ctgtcaccct tccgtttaac ttgggtcaga cagtggcgga        46503

taactgcctg tcgttatccg gaatgggtta tcatttaggt ctcggaggtt attgtccgac        46563

atgcactgca tctggagaac cgcgtctatg tcgaaccgat cgggcggctc tgatactagc        46623

atatgttcag cagcttaaca acatatacga atatcgtgtg tttcttgcat ccattttggc        46683
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acgcgtactt ttttatcgtg atggagatgc cggaggtttt atgatgtatg ttatatttcc      46863

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gtataaaata gtcgcacacg tttggcagac aacattttta ctgtcggtat gtcgcaaccc      46983

agaacaacaa acagagactg tggtgccatc cattggaaca tcggacgttt actgtaaaat      47043

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ccgggtatgc gcgctctaat agccttgcgc atagccaacc agtctttttaa aagaacaccc      48423

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accggatcga tataaaatcc cgtatcaggg tcaaaaaccc tggctccttt atatcctaca   48663

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tagggcaaat ctctcttgga ctcatttaga gcttcacgtg caaccgaatc taatttataa   49083

ctcgagagtt ttaatttttc agttgcaatt gcatacatat ccagagatat gagaccgttg   49143

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cccccacggt ttatactgcc ataaccatca agcttgagac tgtatataga attaagtttc   49263

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tactgtttta cgagggtcat aaatgcaatt aatagctcga attcactatc aaactccagc   49383

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cttttccac atcgggacat gccaagtaaa gtaataacgg taccaagcgg tcgtgttgca   50223

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                                    Met Glu Asn Thr Gln Lys
                                     7920

act gtg aca gtg ccc acg ggg ccc ctg ggt tac gtt tat gcg tgc   50919
Thr Val Thr Val Pro Thr Gly Pro Leu Gly Tyr Val Tyr Ala Cys
7925   7930   7935

cgg gtt gaa gat ttg gat ctg gag gaa att tca ttt ttg gcc gct   50964
Arg Val Glu Asp Leu Asp Leu Glu Glu Ile Ser Phe Leu Ala Ala
7940   7945   7950

cgt agc acg gac tct gat ttg gct tta tta cct ttg atg cgt aat   51009
Arg Ser Thr Asp Ser Asp Leu Ala Leu Leu Pro Leu Met Arg Asn
7955   7960   7965

ttg acc gtg gaa aaa act ttt aca tcc agc ctg gcg gtg gtt tct   51054
Leu Thr Val Glu Lys Thr Phe Thr Ser Ser Leu Ala Val Val Ser
7970   7975   7980

gga gca cgc act acg ggt ctt gcc gga gct ggt att acc tta aaa   51099
Gly Ala Arg Thr Thr Gly Leu Ala Gly Ala Gly Ile Thr Leu Lys
7985   7990   7995

ctc act acc agt cat ttc tat cca tct gtc ttt gtc ttt cac gga   51144
Leu Thr Thr Ser His Phe Tyr Pro Ser Val Phe Val Phe His Gly
8000   8005   8010

ggc aaa cac gtt tta ccc agc tcc gcg gcc cca aat ctc aca cgc   51189
Gly Lys His Val Leu Pro Ser Ser Ala Ala Pro Asn Leu Thr Arg
8015   8020   8025

gcg tgt aac gcg gct cga gaa cgg ttt ggg ttt tca cgc tgc caa   51234
Ala Cys Asn Ala Ala Arg Glu Arg Phe Gly Phe Ser Arg Cys Gln
8030   8035   8040

ggg cct cct gtt gac ggt gct gtt gag acg acc ggc gct gag ata   51279
Gly Pro Pro Val Asp Gly Ala Val Glu Thr Thr Gly Ala Glu Ile
8045   8050   8055

tgc acc cgc ctt gga tta gag cca gaa aat aca ata tta tac ttg   51324

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       Cys Thr Arg Leu Gly Leu   Glu Pro Glu Asn Thr   Ile Leu Tyr Leu
       8060               8065                 8070

gtg    gtc acg gca ttg ttt   aag gaa gcc gta ttt   atg tgc aac gtg      51369
Val    Val Thr Ala Leu Phe   Lys Glu Ala Val Phe   Met Cys Asn Val
8075               8080                 8085

ttt    ctg cat tat gga gga   ctc gat att gtt cat   att aac cat ggg      51414
Phe    Leu His Tyr Gly Gly   Leu Asp Ile Val His   Ile Asn His Gly
8090               8095                 8100

gat    gtt ata cgt ata ccg   tta ttt ccg gta caa   ctt ttc atg ccc      51459
Asp    Val Ile Arg Ile Pro   Leu Phe Pro Val Gln   Leu Phe Met Pro
8105               8110                 8115

gat    gtt aac cgt ctg gta   ccc gac cca ttc aac   act cat cac agg      51504
Asp    Val Asn Arg Leu Val   Pro Asp Pro Phe Asn   Thr His His Arg
8120               8125                 8130

tct    atc gga gag ggt ttt   gta tac cca aca ccc   ttt tat aac acc      51549
Ser    Ile Gly Glu Gly Phe   Val Tyr Pro Thr Pro   Phe Tyr Asn Thr
8135               8140                 8145

ggg    ttg tgc cat tta ata   cat gac tgt gtt att   gct ccc atg gcc      51594
Gly    Leu Cys His Leu Ile   His Asp Cys Val Ile   Ala Pro Met Ala
8150               8155                 8160

gtt    gcc ttg cgc gtc aga   aat gta act gcc gtc   gcc cga gga gcg      51639
Val    Ala Leu Arg Val Arg   Asn Val Thr Ala Val   Ala Arg Gly Ala
8165               8170                 8175

gcc    cac ctt gct ttt gat   gaa aat cac gag ggg   gca gta ctc ccc      51684
Ala    His Leu Ala Phe Asp   Glu Asn His Glu Gly   Ala Val Leu Pro
8180               8185                 8190

cct    gac att acg tac acg   tat ttt cag tcc tct   tca agt gga acc      51729
Pro    Asp Ile Thr Tyr Thr   Tyr Phe Gln Ser Ser   Ser Ser Gly Thr
8195               8200                 8205

act    acc gcc cgt gga gcg   cgt cga aac gat gtc   aac tcc acg tct      51774
Thr    Thr Ala Arg Gly Ala   Arg Arg Asn Asp Val   Asn Ser Thr Ser
8210               8215                 8220

aag    cct agc cca tcg ggg   ggg ttt gaa aga cgg   ttg gcg tct att      51819
Lys    Pro Ser Pro Ser Gly   Gly Phe Glu Arg Arg   Leu Ala Ser Ile
8225               8230                 8235

atg    gcc gct gac aca gcc   ttg cac gca gaa gtt   ata ttc aac act      51864
Met    Ala Ala Asp Thr Ala   Leu His Ala Glu Val   Ile Phe Asn Thr
8240               8245                 8250

gga    att tac gaa gaa act   cca aca gat atc aaa   gaa tgg cca atg      51909
Gly    Ile Tyr Glu Glu Thr   Pro Thr Asp Ile Lys   Glu Trp Pro Met
8255               8260                 8265

ttt    ata ggc atg gag ggc   act ttg cca agg cta   aac gct ctg ggg      51954
Phe    Ile Gly Met Glu Gly   Thr Leu Pro Arg Leu   Asn Ala Leu Gly
8270               8275                 8280

tca    tat acc gct cgt gtg   gcc ggg gtc att ggt   gcg atg gtt ttc      51999
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Ser   Tyr  Thr  Ala  Arg  Val    Ala  Gly  Val  Ile  Gly    Ala  Met  Val  Phe
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Ser   Pro  Asn  Ser  Ala  Leu    Tyr  Leu  Thr  Glu  Val    Glu  Asp  Ser  Gly
8300                 8305                      8310

atg   acc  gaa  gcc  aag  gat    ggg  gga  ccg  ggt  cca    tca  ttt  aat  cga    52089
Met   Thr  Glu  Ala  Lys  Asp    Gly  Gly  Pro  Gly  Pro    Ser  Phe  Asn  Arg
8315                 8320                      8325

ttt   tac  cag  ttt  gcc  gga    cct  cat  tta  gct  gcg    aat  ccc  caa  aca    52134
Phe   Tyr  Gln  Phe  Ala  Gly    Pro  His  Leu  Ala  Ala    Asn  Pro  Gln  Thr
8330                 8335                      8340

gat   cga  gat  ggc  cac  gtt    cta  tcc  agt  cag  tct    acg  ggt  tca  tca    52179
Asp   Arg  Asp  Gly  His  Val    Leu  Ser  Ser  Gln  Ser    Thr  Gly  Ser  Ser
8345                 8350                      8355

aac   aca  gag  ttt  agc  gtg    gat  tat  ttg  gca  ctc    att  tgt  gga  ttt    52224
Asn   Thr  Glu  Phe  Ser  Val    Asp  Tyr  Leu  Ala  Leu    Ile  Cys  Gly  Phe
8360                 8365                      8370

gga   gca  ccc  ctg  ttg  gcg    cga  ctg  ctt  ttt  tat    cta  gaa  cgc  tgt    52269
Gly   Ala  Pro  Leu  Leu  Ala    Arg  Leu  Leu  Phe  Tyr    Leu  Glu  Arg  Cys
8375                 8380                      8385

gac   gct  ggt  gcg  ttt  aca    ggg  ggt  cac  ggg  gat    gcg  tta  aaa  tat    52314
Asp   Ala  Gly  Ala  Phe  Thr    Gly  Gly  His  Gly  Asp    Ala  Leu  Lys  Tyr
8390                 8395                      8400

gtt   acg  ggg  acc  ttt  gac    tct  gaa  att  cca  tgt    agt  tta  tgt  gaa    52359
Val   Thr  Gly  Thr  Phe  Asp    Ser  Glu  Ile  Pro  Cys    Ser  Leu  Cys  Glu
8405                 8410                      8415

aaa   cac  acg  cgg  ccg  gta    tgc  gct  cac  aca  aca    gta  cac  cga  ctt    52404
Lys   His  Thr  Arg  Pro  Val    Cys  Ala  His  Thr  Thr    Val  His  Arg  Leu
8420                 8425                      8430

aga   caa  cgc  atg  ccg  cga    ttt  gga  caa  gcc  acc    cgt  caa  cct  att    52449
Arg   Gln  Arg  Met  Pro  Arg    Phe  Gly  Gln  Ala  Thr    Arg  Gln  Pro  Ile
8435                 8440                      8445

ggg   gtg  ttt  gga  aca  atg    aac  agc  caa  tat  agc    gac  tgc  gat  cct    52494
Gly   Val  Phe  Gly  Thr  Met    Asn  Ser  Gln  Tyr  Ser    Asp  Cys  Asp  Pro
8450                 8455                      8460

cta   gga  aac  tat  gct  cca    tat  tta  atc  ctt  cga    aaa  ccc  ggg  gat    52539
Leu   Gly  Asn  Tyr  Ala  Pro    Tyr  Leu  Ile  Leu  Arg    Lys  Pro  Gly  Asp
8465                 8470                      8475

caa   acg  gaa  gca  gca  aag    gca  acc  atg  cag  gac    act  tat  agg  gct    52584
Gln   Thr  Glu  Ala  Ala  Lys    Ala  Thr  Met  Gln  Asp    Thr  Tyr  Arg  Ala
8480                 8485                      8490

aca   cta  gaa  cgc  ttg  ttt    atc  gat  cta  gaa  caa    gag  cga  cta  ctg    52629
Thr   Leu  Glu  Arg  Leu  Phe    Ile  Asp  Leu  Glu  Gln    Glu  Arg  Leu  Leu
8495                 8500                      8505

gat   cgc  ggt  gcc  cca  tgt    tct  tcc  gag  gga  cta    tcg  tct  gtc  att    52674
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Asp   Arg Gly Ala Pro Cys   Ser Ser Glu Gly Leu   Ser Ser Val Ile
8510                  8515                    8520

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Val   Asp His Pro Thr Phe   Arg Arg Ile Leu Asp   Thr Leu Arg Ala
8525                  8530                    8535

cgt   ata gaa cag aca aca   aca caa ttt atg aaa   gtg ttg gtt gag        52764
Arg   Ile Glu Gln Thr Thr   Thr Gln Phe Met Lys   Val Leu Val Glu
8540                  8545                    8550

acc   cgc gat tat aag atc   cgt gaa gga tta tcc   gaa gcc acc cat        52809
Thr   Arg Asp Tyr Lys Ile   Arg Glu Gly Leu Ser   Glu Ala Thr His
8555                  8560                    8565

tca   atg gcg tta acg ttt   gat cca tac tca gga   gca ttt tgt ccc        52854
Ser   Met Ala Leu Thr Phe   Asp Pro Tyr Ser Gly   Ala Phe Cys Pro
8570                  8575                    8580

att   acc aat ttt tta gtt   aaa cga aca cac cta   gcc gtg gta caa        52899
Ile   Thr Asn Phe Leu Val   Lys Arg Thr His Leu   Ala Val Val Gln
8585                  8590                    8595

gac   tta gca tta agc caa   tgt cat tgt gta ttt   tac gga cag caa        52944
Asp   Leu Ala Leu Ser Gln   Cys His Cys Val Phe   Tyr Gly Gln Gln
8600                  8605                    8610

gtt   gag ggg cgg aac ttt   cgt aac caa ttc caa   cct gtt ttg cgg        52989
Val   Glu Gly Arg Asn Phe   Arg Asn Gln Phe Gln   Pro Val Leu Arg
8615                  8620                    8625

cgg   cgt ttt gtt gac ctg   ttt aat ggg ggg ttt   ata tca aca cgc        53034
Arg   Arg Phe Val Asp Leu   Phe Asn Gly Gly Phe   Ile Ser Thr Arg
8630                  8635                    8640

tct   ata acc gta aca tta   tct gaa ggt cct gta   tcc gcc cca aat        53079
Ser   Ile Thr Val Thr Leu   Ser Glu Gly Pro Val   Ser Ala Pro Asn
8645                  8650                    8655

ccg   aca ttg gga caa gac   gcg ccc gcg ggg cgt   acc ttt gat ggg        53124
Pro   Thr Leu Gly Gln Asp   Ala Pro Ala Gly Arg   Thr Phe Asp Gly
8660                  8665                    8670

gat   tta gcg cgc gta agc   gtg gaa gtt att cgg   gat ata cga gtt        53169
Asp   Leu Ala Arg Val Ser   Val Glu Val Ile Arg   Asp Ile Arg Val
8675                  8680                    8685

aaa   aat agg gtc gtt ttt   tca ggt aac tgt aca   aat ctc tct gag        53214
Lys   Asn Arg Val Val Phe   Ser Gly Asn Cys Thr   Asn Leu Ser Glu
8690                  8695                    8700

gca   gcc cgg gca agg ctt   gta ggc ctt gca agt   gcg tac caa cgc        53259
Ala   Ala Arg Ala Arg Leu   Val Gly Leu Ala Ser   Ala Tyr Gln Arg
8705                  8710                    8715

caa   gaa aaa aga gtg gat   atg tta cac ggg gcc   cta ggg ttt ttg        53304
Gln   Glu Lys Arg Val Asp   Met Leu His Gly Ala   Leu Gly Phe Leu
8720                  8725                    8730

ctt   aaa cag ttt cac ggc   ctg tta ttt cct cgg   ggt atg cca cca        53349
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Leu Lys Gln Phe His Gly  Leu Leu Phe Pro Arg  Gly Met Pro Pro
8735            8740               8745

aac agt aaa tcc ccc aac  ccg cag tgg ttt tgg  acc ctg tta caa      53394
Asn Ser Lys Ser Pro Asn  Pro Gln Trp Phe Trp  Thr Leu Leu Gln
8750            8755               8760

cgc aac cag atg ccg gca  gat aaa ctt aca cac  gaa gag att acc      53439
Arg Asn Gln Met Pro Ala  Asp Lys Leu Thr His  Glu Glu Ile Thr
8765            8770               8775

act att gca gct gtt aaa  cgg ttt acc gag gaa  tat gca gca ata      53484
Thr Ile Ala Ala Val Lys  Arg Phe Thr Glu Glu  Tyr Ala Ala Ile
8780            8785               8790

aac ttt att aat cta ccc  cca acc tgc ata gga  gaa tta gcc cag      53529
Asn Phe Ile Asn Leu Pro  Pro Thr Cys Ile Gly  Glu Leu Ala Gln
8795            8800               8805

ttt tat atg gca aat ctt  att ctt aaa tac tgc  gat cat tca cag      53574
Phe Tyr Met Ala Asn Leu  Ile Leu Lys Tyr Cys  Asp His Ser Gln
8810            8815               8820

tac ctt ata aat acc tta  act tct ata att acg  ggt gcc agg cgc      53619
Tyr Leu Ile Asn Thr Leu  Thr Ser Ile Ile Thr  Gly Ala Arg Arg
8825            8830               8835

ccg cgt gac cca tca tcc  gtt ttg cat tgg att  cgt aaa gat gtc      53664
Pro Arg Asp Pro Ser Ser  Val Leu His Trp Ile  Arg Lys Asp Val
8840            8845               8850

acg tcc gcc gcg gac ata  gaa acc caa gca aag  gcg ctt ctt gaa      53709
Thr Ser Ala Ala Asp Ile  Glu Thr Gln Ala Lys  Ala Leu Leu Glu
8855            8860               8865

aaa acg gaa aac tta ccg  gaa tta tgg act acg  gct ttt act tca      53754
Lys Thr Glu Asn Leu Pro  Glu Leu Trp Thr Thr  Ala Phe Thr Ser
8870            8875               8880

act cat tta gtc cgc gcg  gcc atg aat caa cgt  ccc atg gtc gtt      53799
Thr His Leu Val Arg Ala  Ala Met Asn Gln Arg  Pro Met Val Val
8885            8890               8895

tta gga ata agc att agt  aaa tat cac gga gcg  gca gga aac aac      53844
Leu Gly Ile Ser Ile Ser  Lys Tyr His Gly Ala  Ala Gly Asn Asn
8900            8905               8910

cgc gtc ttt cag gca ggg  aat tgg agc ggt tta  aac ggg ggt aaa      53889
Arg Val Phe Gln Ala Gly  Asn Trp Ser Gly Leu  Asn Gly Gly Lys
8915            8920               8925

aat gta tgc ccg cta ttt  aca ttt gat cgc act  cgc cgt ttt ata      53934
Asn Val Cys Pro Leu Phe  Thr Phe Asp Arg Thr  Arg Arg Phe Ile
8930            8935               8940

ata gca tgt cct aga gga  ggt ttt atc tgc ccc  gta aca ggt ccc      53979
Ile Ala Cys Pro Arg Gly  Gly Phe Ile Cys Pro  Val Thr Gly Pro
8945            8950               8955

tcg tcg gga aat cga gaa  acc acc cta tcc gac  caa gtt cgc ggt      54024
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Ser   Ser Gly Asn Arg Glu   Thr Thr Leu Ser Asp   Gln Val Arg Gly
8960                   8965                 8970

ata att gtc agt ggc ggg   gcc atg gtt caa tta   gcc ata tac gcc        54069
Ile Ile Val Ser Gly Gly   Ala Met Val Gln Leu   Ala Ile Tyr Ala
8975                   8980                 8985

acg gtt gtg cgt gca gtg   ggc gct cga gca caa   cat atg gca ttt        54114
Thr Val Val Arg Ala Val   Gly Ala Arg Ala Gln   His Met Ala Phe
8990                   8995                 9000

gac gac tgg tta agt ctt   aca gac gat gag ttt   tta gcc aga gac        54159
Asp Asp Trp Leu Ser Leu   Thr Asp Asp Glu Phe   Leu Ala Arg Asp
9005                   9010                 9015

ttg gag gag tta cac gac   cag att atc caa acc   ctg gaa acg ccc        54204
Leu Glu Glu Leu His Asp   Gln Ile Ile Gln Thr   Leu Glu Thr Pro
9020                   9025                 9030

tgg acc gta gaa ggc gct   cta gaa gca gta aag   att cta gat gaa        54249
Trp Thr Val Glu Gly Ala   Leu Glu Ala Val Lys   Ile Leu Asp Glu
9035                   9040                 9045

aaa acg aca gcg gga gat   ggg gaa acc ccc aca   aac cta gca ttt        54294
Lys Thr Thr Ala Gly Asp   Gly Glu Thr Pro Thr   Asn Leu Ala Phe
9050                   9055                 9060

aat ttt gat tct tgt gaa   cca agc cat gac acc   aca tct aac gta        54339
Asn Phe Asp Ser Cys Glu   Pro Ser His Asp Thr   Thr Ser Asn Val
9065                   9070                 9075

tta aac att tca ggg tca   aac att tca ggg tca   act gtc cct ggt        54384
Leu Asn Ile Ser Gly Ser   Asn Ile Ser Gly Ser   Thr Val Pro Gly
9080                   9085                 9090

ctt aaa cga ccc ccc gaa   gat gac gaa ctc ttt   gat ctt agt ggt        54429
Leu Lys Arg Pro Pro Glu   Asp Asp Glu Leu Phe   Asp Leu Ser Gly
9095                   9100                 9105

att ccc ata aaa cat ggg   aac att aca atg gaa   atg att taa           54471
Ile Pro Ile Lys His Gly   Asn Ile Thr Met Glu   Met Ile
9110                   9115                 9120

cctcctctt tatccaatta aagcccacac gcgggtgagt gtacgtaata aacaagtcaa     54531

tattacatat tctgttgtgt tttctttttt tgtgtgtagt ccttacccat atgacctgta    54591

atatagtgtg tctccaacca ttcagcttac agtccagtgg acagtaacag cccgataac     54650

atg gaa ttg gat att aat cga aca   ttg ttg gtt cta ctg   ggt caa       54695
Met Glu Leu Asp Ile Asn Arg Thr   Leu Leu Val Leu Leu   Gly Gln
         9125                 9130                 9135

gtt tat acg tac atc ttt cag gtt   gaa ctg cta cgt cga   tgt gat       54740
Val Tyr Thr Tyr Ile Phe Gln Val   Glu Leu Leu Arg Arg   Cys Asp
         9140                 9145                 9150

cca agg gtg gcg tgt cgc ttt tta   tat cgg tta gcg gct   aac tgt       54785
Pro Arg Val Ala Cys Arg Phe Leu   Tyr Arg Leu Ala Ala   Asn Cys
         9155                 9160                 9165
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ttg aca gtt  cgt tat tta tta aag  ctg ttt ctc cgg gga  ttt aat      54830
Leu Thr Val  Arg Tyr Leu Leu Lys  Leu Phe Leu Arg Gly  Phe Asn
        9170                 9175                 9180

acc cag cta  aaa ttt gga aac act  ccc acg gtt tgt gca  ctg cat      54875
Thr Gln Leu  Lys Phe Gly Asn Thr  Pro Thr Val Cys Ala  Leu His
        9185                 9190                 9195

tgg gca tta  tgt tat gta aag gga  gaa ggt gag cgt ttg  ttt gag      54920
Trp Ala Leu  Cys Tyr Val Lys Gly  Glu Gly Glu Arg Leu  Phe Glu
        9200                 9205                 9210

ttg cta caa  cat ttt aaa acg cgt  ttt gtt tat ggt gag  act aaa      54965
Leu Leu Gln  His Phe Lys Thr Arg  Phe Val Tyr Gly Glu  Thr Lys
        9215                 9220                 9225

gac tca aac  tgt atc aaa gat tac  ttt gtc tca gcg ttt  aac tta      55010
Asp Ser Asn  Cys Ile Lys Asp Tyr  Phe Val Ser Ala Phe  Asn Leu
        9230                 9235                 9240

aaa acc tgc  caa tat cac cat gag  ctg tcg tta aca aca  tac gga      55055
Lys Thr Cys  Gln Tyr His His Glu  Leu Ser Leu Thr Thr  Tyr Gly
        9245                 9250                 9255

ggt tac gta  tcg agt gaa att cag  ttt tta cac gac att  gag aat      55100
Gly Tyr Val  Ser Ser Glu Ile Gln  Phe Leu His Asp Ile  Glu Asn
        9260                 9265                 9270

ttt tta aaa  cag ctt aat tac tgc  tat att atc acg tct  tct cgt      55145
Phe Leu Lys  Gln Leu Asn Tyr Cys  Tyr Ile Ile Thr Ser  Ser Arg
        9275                 9280                 9285

gag gcg cta  aac aca ttg gaa acc  gtg acg cgg ttt atg  aca gat      55190
Glu Ala Leu  Asn Thr Leu Glu Thr  Val Thr Arg Phe Met  Thr Asp
        9290                 9295                 9300

act ata gga  agc ggt cta ata cca  ccc gtg gag ttg ttt  gat ccg      55235
Thr Ile Gly  Ser Gly Leu Ile Pro  Pro Val Glu Leu Phe  Asp Pro
        9305                 9310                 9315

gcg cat cca  tgt gct ata tgt ttt  gaa gaa tta tgt ata  aca gct      55280
Ala His Pro  Cys Ala Ile Cys Phe  Glu Glu Leu Cys Ile  Thr Ala
        9320                 9325                 9330

aac caa ggt  gag acc tta cat cgt  aga tta tta gga tgt  atc tgc      55325
Asn Gln Gly  Glu Thr Leu His Arg  Arg Leu Leu Gly Cys  Ile Cys
        9335                 9340                 9345

gat cac gtt  act aag caa gtt cgg  gtt aac gtg gat gtt  gac gat      55370
Asp His Val  Thr Lys Gln Val Arg  Val Asn Val Asp Val  Asp Asp
        9350                 9355                 9360

att att cgg  tgt tta cca tat atc  cct gat gta ccg gat  atc aaa      55415
Ile Ile Arg  Cys Leu Pro Tyr Ile  Pro Asp Val Pro Asp  Ile Lys
        9365                 9370                 9375

cgt caa tcc  gcc gtt gaa gcg tta  cga aca ctt caa acc  aag acg      55460
Arg Gln Ser  Ala Val Glu Ala Leu  Arg Thr Leu Gln Thr  Lys Thr
        9380                 9385                 9390
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gta gtc aat  ccc atg gga gca aag  aac gat acg ttt gac  caa aca        55505
Val Val Asn  Pro Met Gly Ala Lys  Asn Asp Thr Phe Asp  Gln Thr
         9395                9400                9405

tac gaa att  gcg agc acc atg ctt  gat tct tat aat gtt  ttt aaa        55550
Tyr Glu Ile  Ala Ser Thr Met Leu  Asp Ser Tyr Asn Val  Phe Lys
         9410                9415                9420

cct gcc cct  cgg tgt atg tac gcc  atc agc gag ctt aaa  ttc tgg        55595
Pro Ala Pro  Arg Cys Met Tyr Ala  Ile Ser Glu Leu Lys  Phe Trp
         9425                9430                9435

tta acg tct  aat tcc act gaa gga  ccc caa cgt act tta  gac gtg        55640
Leu Thr Ser  Asn Ser Thr Glu Gly  Pro Gln Arg Thr Leu  Asp Val
         9440                9445                9450

ttt gtt gat  aat ttg gat gta tta  aac gaa cat gaa aaa  cac gca        55685
Phe Val Asp  Asn Leu Asp Val Leu  Asn Glu His Glu Lys  His Ala
         9455                9460                9465

gaa ctt aca  gcc gta acg gtt gag  ttg gcg tta ttt gga  aaa act        55730
Glu Leu Thr  Ala Val Thr Val Glu  Leu Ala Leu Phe Gly  Lys Thr
         9470                9475                9480

ccc ata cac  ttt gat agg gcg ttt  tct gaa gaa ctc gga  tct ctg        55775
Pro Ile His  Phe Asp Arg Ala Phe  Ser Glu Glu Leu Gly  Ser Leu
         9485                9490                9495

gat gca att  gat agt att ttg gtt  ggc aat cgc tca tcc  tca cca        55820
Asp Ala Ile  Asp Ser Ile Leu Val  Gly Asn Arg Ser Ser  Ser Pro
         9500                9505                9510

gac agt cag  ata gaa gca tta att  aaa gcc tgt tat gcc  cat cat        55865
Asp Ser Gln  Ile Glu Ala Leu Ile  Lys Ala Cys Tyr Ala  His His
         9515                9520                9525

cta tcg tcg  cct ctc atg cgt cac  att tct aac ccg agt  cat gat        55910
Leu Ser Ser  Pro Leu Met Arg His  Ile Ser Asn Pro Ser  His Asp
         9530                9535                9540

aac gaa gcc  gcc tta cgc caa ctt  tta gaa aga gtt ggg  tgt gag        55955
Asn Glu Ala  Ala Leu Arg Gln Leu  Leu Glu Arg Val Gly  Cys Glu
         9545                9550                9555

gat gat tta  acc aaa gag gcg agt  gac agc gct aca gca  tcc gaa        56000
Asp Asp Leu  Thr Lys Glu Ala Ser  Asp Ser Ala Thr Ala  Ser Glu
         9560                9565                9570

tgt gat ctg  aac gat gat agt agc  ata act ttt gct gtt  cat gga        56045
Cys Asp Leu  Asn Asp Asp Ser Ser  Ile Thr Phe Ala Val  His Gly
         9575                9580                9585

tgg gaa aac  ctg tta tcc aaa gca  aaa att gac gct gcg  gaa aga        56090
Trp Glu Asn  Leu Leu Ser Lys Ala  Lys Ile Asp Ala Ala  Glu Arg
         9590                9595                9600

aaa cga gta  tat ctt gaa cat ctg  tct aag cgc tct cta  acc agc        56135
Lys Arg Val  Tyr Leu Glu His Leu  Ser Lys Arg Ser Leu  Thr Ser
         9605                9610                9615
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ctc ggt aga   tgt atc cgc gaa cag   cgc caa gag cta gaa   aaa aca      56180
Leu Gly Arg   Cys Ile Arg Glu Gln   Arg Gln Glu Leu Glu   Lys Thr
        9620                   9625                   9630

ctc agg gta   aac gtt tat gga gag   gcc tta ttg cag aca   ttt gtt      56225
Leu Arg Val   Asn Val Tyr Gly Glu   Ala Leu Leu Gln Thr   Phe Val
        9635                   9640                   9645

tcg atg caa   aat ggg ttt ggg gca   cga aac gtg ttt tta   gct aag      56270
Ser Met Gln   Asn Gly Phe Gly Ala   Arg Asn Val Phe Leu   Ala Lys
        9650                   9655                   9660

gtt tcc cag   gca ggg tgt att atc   gac aat cgc att cag   gaa gcg      56315
Val Ser Gln   Ala Gly Cys Ile Ile   Asp Asn Arg Ile Gln   Glu Ala
        9665                   9670                   9675

gcc ttt gat   gca cat aga ttt ata   agg aat acc tta gtt   cga cat      56360
Ala Phe Asp   Ala His Arg Phe Ile   Arg Asn Thr Leu Val   Arg His
        9680                   9685                   9690

aca gta gat   gcg gct atg tta cct   gca ctt aca cat aaa   ttt ttt      56405
Thr Val Asp   Ala Ala Met Leu Pro   Ala Leu Thr His Lys   Phe Phe
        9695                   9700                   9705

gag ttg gtc   aac ggc cca ttg ttt   aat cac gat gaa cac   cgt ttt      56450
Glu Leu Val   Asn Gly Pro Leu Phe   Asn His Asp Glu His   Arg Phe
        9710                   9715                   9720

gca caa ccc   cct aac acc gcc tta   ttt ttt acc gtg gaa   aac gtt      56495
Ala Gln Pro   Pro Asn Thr Ala Leu   Phe Phe Thr Val Glu   Asn Val
        9725                   9730                   9735

ggc cta ttt   ccg cac tta aaa gag   gaa ttg gca aag ttt   atg ggc      56540
Gly Leu Phe   Pro His Leu Lys Glu   Glu Leu Ala Lys Phe   Met Gly
        9740                   9745                   9750

ggt gtc gtt   ggt tcc aac tgg ctt   ctc agt cca ttt agg   ggc ttt      56585
Gly Val Val   Gly Ser Asn Trp Leu   Leu Ser Pro Phe Arg   Gly Phe
        9755                   9760                   9765

tat tgc ttt   tct ggg gta gaa ggc   gtt act ttt gca cag   aga ctt      56630
Tyr Cys Phe   Ser Gly Val Glu Gly   Val Thr Phe Ala Gln   Arg Leu
        9770                   9775                   9780

gcc tgg aaa   tat att agg gag ctt   gtg ttt gca acc aca   cta ttc      56675
Ala Trp Lys   Tyr Ile Arg Glu Leu   Val Phe Ala Thr Thr   Leu Phe
        9785                   9790                   9795

acc tct gtt   ttc cat tgt ggg gag   gtg cgg tta tgt cgc   gtt gac      56720
Thr Ser Val   Phe His Cys Gly Glu   Val Arg Leu Cys Arg   Val Asp
        9800                   9805                   9810

cgt cta ggt   aag gat cca cgc ggg   tgc acg tct caa cct   aaa ggt      56765
Arg Leu Gly   Lys Asp Pro Arg Gly   Cys Thr Ser Gln Pro   Lys Gly
        9815                   9820                   9825

ata ggc agt   tcc cac gga ccc tta   gac ggc att tat tta   acg tac      56810
Ile Gly Ser   Ser His Gly Pro Leu   Asp Gly Ile Tyr Leu   Thr Tyr
        9830                   9835                   9840
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gaa gaa aca  tgt ccc ctt gtg gct  att att caa agt gga  gaa aca          56855
Glu Glu Thr  Cys Pro Leu Val Ala  Ile Ile Gln Ser Gly  Glu Thr
        9845                9850                9855

ggg atc gac  cag aat acc gtc gta  atc tac gat tca gac  gtt ttt          56900
Gly Ile Asp  Gln Asn Thr Val Val  Ile Tyr Asp Ser Asp  Val Phe
        9860                9865                9870

tct ctt cta  tac acc cta atg cag  cgg ctg gct ccg gat  tca acg          56945
Ser Leu Leu  Tyr Thr Leu Met Gln  Arg Leu Ala Pro Asp  Ser Thr
        9875                9880                9885

gac ccg gcg  ttt tca taa cctccgttac gggggtgtgg ttatgctttt             56993
Asp Pro Ala  Phe Ser
        9890

tatgcatatt ttct atg ttt gtt  acg gcg gtt gtg tcg  gtc tct cca agc       57043
              Met Phe Val  Thr Ala Val Val Ser  Val Ser Pro Ser
                   9895                 9900

tcg ttt tat gag agt tta  caa gta gag ccc aca  caa tca gaa gat          57088
Ser Phe Tyr Glu Ser Leu  Gln Val Glu Pro Thr  Gln Ser Glu Asp
9905            9910                9915

ata acc cgg tct gct cat  ctg ggc gat ggt gat  gaa atc aga gaa          57133
Ile Thr Arg Ser Ala His  Leu Gly Asp Gly Asp  Glu Ile Arg Glu
9920            9925                9930

gct ata cac aag tcc cag  gac gcc gaa aca aaa  ccc acg ttt tac          57178
Ala Ile His Lys Ser Gln  Asp Ala Glu Thr Lys  Pro Thr Phe Tyr
9935            9940                9945

gtc tgc cca ccg cca aca  ggc tcc aca atc gta  cga tta gaa cca          57223
Val Cys Pro Pro Pro Thr  Gly Ser Thr Ile Val  Arg Leu Glu Pro
9950            9955                9960

act cgg aca tgt ccg gat  tat cac ctt ggt aaa  aac ttt aca gag          57268
Thr Arg Thr Cys Pro Asp  Tyr His Leu Gly Lys  Asn Phe Thr Glu
9965            9970                9975

ggt att gct gtt gtt tat  aaa gaa aac att gca  gcg tac aag ttt          57313
Gly Ile Ala Val Val Tyr  Lys Glu Asn Ile Ala  Ala Tyr Lys Phe
9980            9985                9990

aag gcg acg gta tat tac   aaa gat gtt atc gtt   agc acg gcg tgg        57358
Lys Ala Thr Val Tyr Tyr   Lys Asp Val Ile Val   Ser Thr Ala Trp
9995             10000              10005

gcc  gga agt tct tat acg   caa att act aat aga   tat gcg gat agg       57403
Ala  Gly Ser Ser Tyr Thr   Gln Ile Thr Asn Arg   Tyr Ala Asp Arg
10010            10015              10020

gta  cca att ccc gtt tca   gag atc acg gac acc   att gat aag ttt       57448
Val  Pro Ile Pro Val Ser   Glu Ile Thr Asp Thr   Ile Asp Lys Phe
10025            10030              10035

ggc  aag tgt tct tct aaa   gca acg tac gta cga   aat aac cac aaa       57493
Gly  Lys Cys Ser Ser Lys   Ala Thr Tyr Val Arg   Asn Asn His Lys
10040            10045              10050
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gtt   gaa gcc ttt aat gag   gat aaa aat cca cag   gat atg cct cta   57538
Val   Glu Ala Phe Asn Glu   Asp Lys Asn Pro Gln   Asp Met Pro Leu
10055                   10060                   10065

atc   gca tca aaa tat aat   tct gtg gga tcc aaa   gca tgg cat act   57583
Ile   Ala Ser Lys Tyr Asn   Ser Val Gly Ser Lys   Ala Trp His Thr
10070                   10075                   10080

acc   aat gac acg tac atg   gtt gcc gga acc ccc   gga aca tat agg   57628
Thr   Asn Asp Thr Tyr Met   Val Ala Gly Thr Pro   Gly Thr Tyr Arg
10085                   10090                   10095

acg   ggc acg tcg gtg aat   tgc atc att gag gaa   gtt gaa gcc aga   57673
Thr   Gly Thr Ser Val Asn   Cys Ile Ile Glu Glu   Val Glu Ala Arg
10100                   10105                   10110

tca   ata ttc cct tat gat   agt ttt gga ctt tcc   acg gga gat ata   57718
Ser   Ile Phe Pro Tyr Asp   Ser Phe Gly Leu Ser   Thr Gly Asp Ile
10115                   10120                   10125

ata   tac atg tcc ccg ttt   ttt ggc cta cgg gat   ggt gca tac aga   57763
Ile   Tyr Met Ser Pro Phe   Phe Gly Leu Arg Asp   Gly Ala Tyr Arg
10130                   10135                   10140

gaa   cat tcc aat tat gca   atg gat cgt ttt cac   cag ttt gag ggt   57808
Glu   His Ser Asn Tyr Ala   Met Asp Arg Phe His   Gln Phe Glu Gly
10145                   10150                   10155

tat   aga caa agg gat ctt   gac act aga gca tta   ctg gaa cct gca   57853
Tyr   Arg Gln Arg Asp Leu   Asp Thr Arg Ala Leu   Leu Glu Pro Ala
10160                   10165                   10170

gcg   cgg aac ttt tta gtc   acg cct cat tta acg   gtt ggt tgg aac   57898
Ala   Arg Asn Phe Leu Val   Thr Pro His Leu Thr   Val Gly Trp Asn
10175                   10180                   10185

tgg   aag cca aaa cga acg   gaa gtt tgt tcg ctt   gtc aag tgg cgt   57943
Trp   Lys Pro Lys Arg Thr   Glu Val Cys Ser Leu   Val Lys Trp Arg
10190                   10195                   10200

gag   gtt gaa gac gta gtt   cgc gat gag tat gca   cac aat ttt cgc   57988
Glu   Val Glu Asp Val Val   Arg Asp Glu Tyr Ala   His Asn Phe Arg
10205                   10210                   10215

ttt   aca atg aaa aca ctt   tct acc acg ttt ata   agt gaa aca aac   58033
Phe   Thr Met Lys Thr Leu   Ser Thr Thr Phe Ile   Ser Glu Thr Asn
10220                   10225                   10230

gag   ttt aat ctt aac caa   atc cat ctc agt caa   tgt gta aag gag   58078
Glu   Phe Asn Leu Asn Gln   Ile His Leu Ser Gln   Cys Val Lys Glu
10235                   10240                   10245

gaa   gcc cgg gct att att   aac cgg atc tat aca   acc aga tac aac   58123
Glu   Ala Arg Ala Ile Ile   Asn Arg Ile Tyr Thr   Thr Arg Tyr Asn
10250                   10255                   10260

tca   tct cat gtt aga acc   ggg gat atc cag acc   tac ctt gcc aga   58168
Ser   Ser His Val Arg Thr   Gly Asp Ile Gln Thr   Tyr Leu Ala Arg
10265                   10270                   10275
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ggg   ggg ttt gtt gtg gtg   ttt caa ccc ctg ctg   agc aat tcc ctc   58213
Gly   Gly Phe Val Val Val   Phe Gln Pro Leu Leu   Ser Asn Ser Leu
10280                   10285                 10290

gcc   cgt ctc tat ctc caa   gaa ttg gtc cgt gaa   aac act aat cat   58258
Ala   Arg Leu Tyr Leu Gln   Glu Leu Val Arg Glu   Asn Thr Asn His
10295                   10300                 10305

tca   cca caa aaa cac ccg   act cga aat acc aga   tcc cga cga agc   58303
Ser   Pro Gln Lys His Pro   Thr Arg Asn Thr Arg   Ser Arg Arg Ser
10310                   10315                 10320

gtg   cca gtt gag ttg cgt   gcc aat aga aca ata   aca acc acc tca   58348
Val   Pro Val Glu Leu Arg   Ala Asn Arg Thr Ile   Thr Thr Thr Ser
10325                   10330                 10335

tcg   gtg gaa ttt gct atg   ctc cag ttt aca tat   gac cac att caa   58393
Ser   Val Glu Phe Ala Met   Leu Gln Phe Thr Tyr   Asp His Ile Gln
10340                   10345                 10350

gag   cat gtt aat gaa atg   ttg gca cgt atc tcc   tcg tcg tgg tgc   58438
Glu   His Val Asn Glu Met   Leu Ala Arg Ile Ser   Ser Ser Trp Cys
10355                   10360                 10365

cag   cta caa aat cgc gaa   cgc gcc ctt tgg agc   gga cta ttt cca   58483
Gln   Leu Gln Asn Arg Glu   Arg Ala Leu Trp Ser   Gly Leu Phe Pro
10370                   10375                 10380

att   aac cca agt gct tta   gcg agc acc att ttg   gat caa cgt gtt   58528
Ile   Asn Pro Ser Ala Leu   Ala Ser Thr Ile Leu   Asp Gln Arg Val
10385                   10390                 10395

aaa   gct cgt att ctc ggc   gac gtt atc tcc gtt   tct aat tgt cca   58573
Lys   Ala Arg Ile Leu Gly   Asp Val Ile Ser Val   Ser Asn Cys Pro
10400                   10405                 10410

gaa   ctg gga tca gat aca   cgc att ata ctt caa   aac tct atg agg   58618
Glu   Leu Gly Ser Asp Thr   Arg Ile Ile Leu Gln   Asn Ser Met Arg
10415                   10420                 10425

gta   tct ggt agt act acg   cgt tgt tat agc cgt   cct tta att tca   58663
Val   Ser Gly Ser Thr Thr   Arg Cys Tyr Ser Arg   Pro Leu Ile Ser
10430                   10435                 10440

ata   gtt agt tta aat ggg   tcc ggg acg gtg gag   ggc cag ctt gga   58708
Ile   Val Ser Leu Asn Gly   Ser Gly Thr Val Glu   Gly Gln Leu Gly
10445                   10450                 10455

aca   gat aac gag tta att   atg tcc aga gat ctg   tta gaa cca tgc   58753
Thr   Asp Asn Glu Leu Ile   Met Ser Arg Asp Leu   Leu Glu Pro Cys
10460                   10465                 10470

gtg   gct aat cac aag cga   tat ttt cta ttt ggg   cat cac tac gta   58798
Val   Ala Asn His Lys Arg   Tyr Phe Leu Phe Gly   His His Tyr Val
10475                   10480                 10485

tat   tat gag gat tat cgt   tac gtc cgt gaa atc   gca gtc cat gat   58843
Tyr   Tyr Glu Asp Tyr Arg   Tyr Val Arg Glu Ile   Ala Val His Asp
10490                   10495                 10500
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gtg   gga atg att agc act   tac gta gat tta aac   tta aca ctt ctt   58888
Val   Gly Met Ile Ser Thr   Tyr Val Asp Leu Asn   Leu Thr Leu Leu
10505                 10510                 10515

aaa   gat aga gag ttt atg   ccg ctg caa gta tat   aca aga gac gag   58933
Lys   Asp Arg Glu Phe Met   Pro Leu Gln Val Tyr   Thr Arg Asp Glu
10520                 10525                 10530

ctg   cgg gat aca gga tta   cta gac tac agt gaa   att caa cgc cga   58978
Leu   Arg Asp Thr Gly Leu   Leu Asp Tyr Ser Glu   Ile Gln Arg Arg
10535                 10540                 10545

aat   caa atg cat tcg ctg   cgt ttt tat gac ata   gac aag gtt gtg   59023
Asn   Gln Met His Ser Leu   Arg Phe Tyr Asp Ile   Asp Lys Val Val
10550                 10555                 10560

caa   tat gat agc gga acg   gcc att atg cag ggc   atg gct cag ttt   59068
Gln   Tyr Asp Ser Gly Thr   Ala Ile Met Gln Gly   Met Ala Gln Phe
10565                 10570                 10575

ttc   cag gga ctt ggg acc   gcg ggc cag gcc gtt   gga cat gtg gtt   59113
Phe   Gln Gly Leu Gly Thr   Ala Gly Gln Ala Val   Gly His Val Val
10580                 10585                 10590

ctt   ggg gcc acg gga gcg   ctg ctt tcc acc gta   cac gga ttt acc   59158
Leu   Gly Ala Thr Gly Ala   Leu Leu Ser Thr Val   His Gly Phe Thr
10595                 10600                 10605

acg   ttt tta tct aac cca   ttt ggg gca ttg gcc   gtg gga tta ttg   59203
Thr   Phe Leu Ser Asn Pro   Phe Gly Ala Leu Ala   Val Gly Leu Leu
10610                 10615                 10620

gtt   ttg gcg gga ctg gta   gcg gcc ttt ttt gcg   tac cgg tac gtg   59248
Val   Leu Ala Gly Leu Val   Ala Ala Phe Phe Ala   Tyr Arg Tyr Val
10625                 10630                 10635

ctt   aaa ctt aaa aca agc   ccg atg aag gca tta   tat cca ctc aca   59293
Leu   Lys Leu Lys Thr Ser   Pro Met Lys Ala Leu   Tyr Pro Leu Thr
10640                 10645                 10650

acc   aag ggg tta aaa cag   tta ccg gaa gga atg   gat ccc ttt gcc   59338
Thr   Lys Gly Leu Lys Gln   Leu Pro Glu Gly Met   Asp Pro Phe Ala
10655                 10660                 10665

gag   aaa ccc aac gct act   gat acc cca ata gaa   gaa att ggc gac   59383
Glu   Lys Pro Asn Ala Thr   Asp Thr Pro Ile Glu   Glu Ile Gly Asp
10670                 10675                 10680

tca   caa aac act gaa ccg   tcg gta aat agc ggg   ttt gat ccc gat   59428
Ser   Gln Asn Thr Glu Pro   Ser Val Asn Ser Gly   Phe Asp Pro Asp
10685                 10690                 10695

aaa   ttt cga gaa gcc cag   gaa atg att aaa tat   atg acg tta gta   59473
Lys   Phe Arg Glu Ala Gln   Glu Met Ile Lys Tyr   Met Thr Leu Val
10700                 10705                 10710

tct   gcg gct gag cgc caa   gaa tct aaa gcc cgc   aaa aaa aat aag   59518
Ser   Ala Ala Glu Arg Gln   Glu Ser Lys Ala Arg   Lys Lys Asn Lys
10715                 10720                 10725
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act   agc gcc ctt tta act   tca cgt ctt acc ggc   ctt gct tta cga    59563
Thr   Ser Ala Leu Leu Thr   Ser Arg Leu Thr Gly   Leu Ala Leu Arg
10730                       10735                 10740

aat   cgc cga gga tac tcc   cgt gtt cgc acc gag   aat gta acg ggg    59608
Asn   Arg Arg Gly Tyr Ser   Arg Val Arg Thr Glu   Asn Val Thr Gly
10745                       10750                 10755

gtg   taa atagccaggg ggtttgtttt aatttattaa taaaaatgtg tattacgtta    59664
Val
10760

ctcatgtgtc tccattacgc atcacagggg gtatttatac ccgataatat acaaaacgcg    59724

ttttgtacct ctaccgcacc cgatatctta acggggttat t atg gaa tcg tct       59777
                                            Met Glu Ser Ser

aac   att aac gcg cta caa   caa ccg tcg tct atc   gca cat cat ccg    59822
Asn   Ile Asn Ala Leu Gln   Gln Pro Ser Ser Ile   Ala His His Pro
10765                       10770                 10775

tcc   aaa cag tgc gct tca   agt ctc aat gaa aca   gta aaa gat tct    59867
Ser   Lys Gln Cys Ala Ser   Ser Leu Asn Glu Thr   Val Lys Asp Ser
10780                       10785                 10790

ccc   ccc gcg att tat gaa   gat agg tta gaa cac   acg ccg gta caa    59912
Pro   Pro Ala Ile Tyr Glu   Asp Arg Leu Glu His   Thr Pro Val Gln
10795                       10800                 10805

tta   ccc cgc gac ggt aca   ccc cga gac gta tgt   tct gtg gga cag    59957
Leu   Pro Arg Asp Gly Thr   Pro Arg Asp Val Cys   Ser Val Gly Gln
10810                       10815                 10820

cta   acc tgt cga gca tgt   gca acg aaa cct ttt   cgc ctt aac cgc    60002
Leu   Thr Cys Arg Ala Cys   Ala Thr Lys Pro Phe   Arg Leu Asn Arg
10825                       10830                 10835

gac   agc caa tac gac tac   tta aac aca tgt cca   ggg ggc cgt cat    60047
Asp   Ser Gln Tyr Asp Tyr   Leu Asn Thr Cys Pro   Gly Gly Arg His
10840                       10845                 10850

att   tca ctg gca ctg gag   att ata acg ggt cga   tgg gtt tgc atc    60092
Ile   Ser Leu Ala Leu Glu   Ile Ile Thr Gly Arg   Trp Val Cys Ile
10855                       10860                 10865

ccg   cgt gtg ttt ccg gat   acc cca gag gaa aaa   tgg atg gcg cca    60137
Pro   Arg Val Phe Pro Asp   Thr Pro Glu Glu Lys   Trp Met Ala Pro
10870                       10875                 10880

tat   att att cca gac cga   gaa caa cca tca tca   ggg gat gaa gat    60182
Tyr   Ile Ile Pro Asp Arg   Glu Gln Pro Ser Ser   Gly Asp Glu Asp
10885                       10890                 10895

tct   gac acc gat taa atttaactta aataaaacct taccacccat aaaaacgcct    60237
Ser   Asp Thr Asp
10900

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acaataaac atg tca   acg gat aaa acc gat   gta aaa atg ggc gtt    64842
                Met Ser   Thr Asp Lys Thr Asp   Val Lys Met Gly Val
                 10905                10910                  10915

ttg cgt att tat ttg   gac ggg gcg tat gga   att gga aaa aca acc    64887
Leu Arg Ile Tyr Leu   Asp Gly Ala Tyr Gly   Ile Gly Lys Thr Thr
            10920                10925                  10930

gcc gcc gaa gaa ttt   tta cac cac ttt gca   ata aca cca aac cgg    64932
Ala Ala Glu Glu Phe   Leu His His Phe Ala   Ile Thr Pro Asn Arg
            10935                10940                  10945

atc tta ctc att ggg   gag ccc ctg tcg tat   tgg cgt aac ctt gca    64977
Ile Leu Leu Ile Gly   Glu Pro Leu Ser Tyr   Trp Arg Asn Leu Ala
            10950                10955                  10960

ggg gag gac gcc att   tgc gga att tac gga   aca caa act cgc cgt    65022
Gly Glu Asp Ala Ile   Cys Gly Ile Tyr Gly   Thr Gln Thr Arg Arg
            10965                10970                  10975

ctt aat gga gac gtt   tcg cct gaa gac gca   caa cgc ctc acg gct    65067
Leu Asn Gly Asp Val   Ser Pro Glu Asp Ala   Gln Arg Leu Thr Ala
            10980                10985                  10990

cat ttt cag agc ctg   ttc tgt tct ccg cat   gca att atg cat gcg    65112
His Phe Gln Ser Leu   Phe Cys Ser Pro His   Ala Ile Met His Ala
            10995                11000                  11005

aaa atc tcg gca ttg   atg gac aca agt aca   tcg gat ctc gta caa    65157
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Lys Ile Ser Ala Leu   Met Asp Thr Ser Thr   Ser Asp Leu Val Gln
        11010                   11015                   11020

gta aat aag gag ccg   tat aaa att atg tta   tcc gac cga cac cca     65202
Val Asn Lys Glu Pro   Tyr Lys Ile Met Leu   Ser Asp Arg His Pro
        11025                   11030                   11035

atc gcc tca act ata   tgt ttt ccc ttg tcc   aga tac tta gtg gga     65247
Ile Ala Ser Thr Ile   Cys Phe Pro Leu Ser   Arg Tyr Leu Val Gly
        11040                   11045                   11050

gat atg tcc cca gcg   gcg ctt cct ggg tta   ttg ttt acg ctt ccc     65292
Asp Met Ser Pro Ala   Ala Leu Pro Gly Leu   Leu Phe Thr Leu Pro
        11055                   11060                   11065

gct gaa ccc ccc ggg   acc aac ttg gta gtt   tgt acc gtt tca ctc     65337
Ala Glu Pro Pro Gly   Thr Asn Leu Val Val   Cys Thr Val Ser Leu
        11070                   11075                   11080

ccc agt cat tta tcc   aga gta agc aaa cgg   gcc aga ccg gga gaa     65382
Pro Ser His Leu Ser   Arg Val Ser Lys Arg   Ala Arg Pro Gly Glu
        11085                   11090                   11095

acg gtt aat ctg ccg   ttt gtt atg gtt ctg   aga aat gta tat ata     65427
Thr Val Asn Leu Pro   Phe Val Met Val Leu   Arg Asn Val Tyr Ile
        11100                   11105                   11110

atg ctt att aat aca   att ata ttt ctt aaa   act aac aac tgg cac     65472
Met Leu Ile Asn Thr   Ile Ile Phe Leu Lys   Thr Asn Asn Trp His
        11115                   11120                   11125

gcg ggc tgg aac aca   ctg tca ttt tgt aat   gat gta ttt aaa cag     65517
Ala Gly Trp Asn Thr   Leu Ser Phe Cys Asn   Asp Val Phe Lys Gln
        11130                   11135                   11140

aaa tta caa aaa tcc   gag tgt ata aaa cta   cgc gaa gta cct ggg     65562
Lys Leu Gln Lys Ser   Glu Cys Ile Lys Leu   Arg Glu Val Pro Gly
        11145                   11150                   11155

att gaa gac acg tta   ttc gcc gtg ctt aaa   ctt ccg gag ctt tgc     65607
Ile Glu Asp Thr Leu   Phe Ala Val Leu Lys   Leu Pro Glu Leu Cys
        11160                   11165                   11170

gga gag ttt gga aat   att ctg ccg tta tgg   gca tgg gga atg gag     65652
Gly Glu Phe Gly Asn   Ile Leu Pro Leu Trp   Ala Trp Gly Met Glu
        11175                   11180                   11185

acc ctt tca aac tgc   tca cga agc atg tct   ccg ttc gta tta tcg     65697
Thr Leu Ser Asn Cys   Ser Arg Ser Met Ser   Pro Phe Val Leu Ser
        11190                   11195                   11200

tta gaa cag aca ccc   cag cat gcg gca caa   gaa cta aaa act ctg     65742
Leu Glu Gln Thr Pro   Gln His Ala Ala Gln   Glu Leu Lys Thr Leu
        11205                   11210                   11215

cta ccc cag atg acc   ccg gca aac atg tcc   tcc ggt gca tgg aat     65787
Leu Pro Gln Met Thr   Pro Ala Asn Met Ser   Ser Gly Ala Trp Asn
        11220                   11225                   11230

ata ttg aaa gag ctt   gtt aat gcc gtt cag   gac aac act tcc taa     65832
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Ile Leu Lys Glu Leu   Val Asn Ala Val Gln   Asp Asn Thr Ser
         11235   11240

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  Met   Phe Ala Leu Val Leu   Ala Val Val Ile Leu   Pro Leu Trp
  11245   11250   11255

acc acg   gct aat aaa tct tac   gta aca cca acc cct   gcg act cgc   66160
Thr Thr   Ala Asn Lys Ser Tyr   Val Thr Pro Thr Pro   Ala Thr Arg
  11260   11265   11270

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Ser Ile   Gly His Met Ser Ala   Leu Leu Arg Glu Tyr   Ser Asp Arg
  11275   11280   11285

aat atg   tct ctg aaa tta gaa   gcc ttt tat cct act   ggt ttc gat   66250
Asn Met   Ser Leu Lys Leu Glu   Ala Phe Tyr Pro Thr   Gly Phe Asp
  11290   11295   11300

gaa gaa   ctc att aaa tca ctt   cac tgg gga aat gat   aga aaa cac   66295
Glu Glu   Leu Ile Lys Ser Leu   His Trp Gly Asn Asp   Arg Lys His
  11305   11310   11315

gtt ttc   ttg gtt att gtt aag   gtt aac cct aca aca   cac gaa gga   66340
Val Phe   Leu Val Ile Val Lys   Val Asn Pro Thr Thr   His Glu Gly
  11320   11325   11330

gac gtc   ggg ctg gtt ata ttt   cca aaa tac ttg tta   tcg cca tac   66385
Asp Val   Gly Leu Val Ile Phe   Pro Lys Tyr Leu Leu   Ser Pro Tyr
  11335   11340   11345

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His Phe   Lys Ala Glu His Arg   Ala Pro Phe Pro Ala   Gly Arg Phe
  11350   11355   11360

gga ttt   ctt agt cac cct gtg   aca ccc gac gtg agc   ttc ttt gac   66475
Gly Phe   Leu Ser His Pro Val   Thr Pro Asp Val Ser   Phe Phe Asp
  11365   11370   11375

agt tcg   ttt gcg ccg tat tta   act acg caa cat ctt   gtt gcg ttt   66520
Ser Ser   Phe Ala Pro Tyr Leu   Thr Thr Gln His Leu   Val Ala Phe
  11380   11385   11390

act acg   ttc cca cca aac ccc   ctt gta tgg cat ttg   gaa aga gct   66565
Thr Thr   Phe Pro Pro Asn Pro   Leu Val Trp His Leu   Glu Arg Ala
  11395   11400   11405

gag acc   gca gca act gca gaa   agg ccg ttt ggg gta   agt ctt tta   66610
Glu Thr   Ala Ala Thr Ala Glu   Arg Pro Phe Gly Val   Ser Leu Leu
  11410   11415   11420

ccc gct   cgc cca aca gtc ccc   aag aat act att ctg   gaa cat aaa   66655

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Pro Ala   Arg Pro Thr Val Pro   Lys Asn Thr Ile Leu   Glu His Lys
11425                   11430                11435

gcg cat   ttt gct aca tgg gat   gcc ctt gcc cga cat   act ttt ttt   66700
Ala His   Phe Ala Thr Trp Asp   Ala Leu Ala Arg His   Thr Phe Phe
11440                   11445                11450

tct gcc   gaa gca att atc acc   aac tca acg ttg aga   ata cac gtt   66745
Ser Ala   Glu Ala Ile Ile Thr   Asn Ser Thr Leu Arg   Ile His Val
11455                   11460                11465

ccc ctt   ttt ggg tcg gta tgg   cca att cga tac tgg   gcc acc ggt   66790
Pro Leu   Phe Gly Ser Val Trp   Pro Ile Arg Tyr Trp   Ala Thr Gly
11470                   11475                11480

tcg gtg   ctt ctc aca agc gac   tcg ggt cgt gtg gaa   gta aat att   66835
Ser Val   Leu Leu Thr Ser Asp   Ser Gly Arg Val Glu   Val Asn Ile
11485                   11490                11495

ggt gta   gga ttt atg agc tcg   ctc att tct tta tcc   tct gga cca   66880
Gly Val   Gly Phe Met Ser Ser   Leu Ile Ser Leu Ser   Ser Gly Pro
11500                   11505                11510

ccg ata   gaa tta att gtt gta   cca cat aca gta aaa   ctg aac gcg   66925
Pro Ile   Glu Leu Ile Val Val   Pro His Thr Val Lys   Leu Asn Ala
11515                   11520                11525

gtt aca   agc gac acc aca tgg   ttc cag cta aat cca   ccg ggt ccg   66970
Val Thr   Ser Asp Thr Thr Trp   Phe Gln Leu Asn Pro   Pro Gly Pro
11530                   11535                11540

gat ccg   ggg cca tct tat cga   gtt tat tta ctt gga   cgt ggg ttg   67015
Asp Pro   Gly Pro Ser Tyr Arg   Val Tyr Leu Leu Gly   Arg Gly Leu
11545                   11550                11555

gat atg   aat ttt tca aag cat   gct acg gtc gat ata   tgc gca tat   67060
Asp Met   Asn Phe Ser Lys His   Ala Thr Val Asp Ile   Cys Ala Tyr
11560                   11565                11570

ccc gaa   gag agt ttg gat tac   cgc tat cat tta tcc   atg gcc cac   67105
Pro Glu   Glu Ser Leu Asp Tyr   Arg Tyr His Leu Ser   Met Ala His
11575                   11580                11585

acg gag   gct ctg cgg atg aca   acg aag gcg gat caa   cat gac ata   67150
Thr Glu   Ala Leu Arg Met Thr   Thr Lys Ala Asp Gln   His Asp Ile
11590                   11595                11600

aac gag   gaa agc tat tac cat   atc gcc gca aga ata   gcc aca tca   67195
Asn Glu   Glu Ser Tyr Tyr His   Ile Ala Ala Arg Ile   Ala Thr Ser
11605                   11610                11615

att ttt   gcg ttg tcg gaa atg   ggc cgt acc aca gaa   tat ttt ctg   67240
Ile Phe   Ala Leu Ser Glu Met   Gly Arg Thr Thr Glu   Tyr Phe Leu
11620                   11625                11630

tta gat   gag atc gta gat gtt   cag tat caa tta aaa   ttc ctt aat   67285
Leu Asp   Glu Ile Val Asp Val   Gln Tyr Gln Leu Lys   Phe Leu Asn
11635                   11640                11645

tac att   tta atg cgg ata gga   gca gga gct cat ccc   aac act ata   67330
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Tyr Ile   Leu Met Arg Ile Gly   Ala Gly Ala His Pro   Asn Thr Ile
11650                     11655                11660

tcc gga   acc tcg gat ctg atc   ttt gcc gat cca tcg   cag ctt cat   67375
Ser Gly   Thr Ser Asp Leu Ile   Phe Ala Asp Pro Ser   Gln Leu His
11665                     11670                11675

gac gaa   ctt tca ctt ctt ttt   ggt cag gta aaa ccc   gca aat gtc   67420
Asp Glu   Leu Ser Leu Leu Phe   Gly Gln Val Lys Pro   Ala Asn Val
11680                     11685                11690

gat tat   ttt att tca tat gat   gaa gcc cgt gat caa   cta aag acc   67465
Asp Tyr   Phe Ile Ser Tyr Asp   Glu Ala Arg Asp Gln   Leu Lys Thr
11695                     11700                11705

gca tac   gcg ctt tcc cgt ggt   caa gac cat gtg aat   gca ctt tct   67510
Ala Tyr   Ala Leu Ser Arg Gly   Gln Asp His Val Asn   Ala Leu Ser
11710                     11715                11720

ctc gcc   agg cgt gtt ata atg   agc ata tac aag ggg   ctg ctt gtg   67555
Leu Ala   Arg Arg Val Ile Met   Ser Ile Tyr Lys Gly   Leu Leu Val
11725                     11730                11735

aag caa   aat tta aat gct aca   gag agg cag gct tta   ttt ttt gcc   67600
Lys Gln   Asn Leu Asn Ala Thr   Glu Arg Gln Ala Leu   Phe Phe Ala
11740                     11745                11750

tca atg   att tta tta aat ttc   cgc gaa gga cta gaa   aat tca tct   67645
Ser Met   Ile Leu Leu Asn Phe   Arg Glu Gly Leu Glu   Asn Ser Ser
11755                     11760                11765

cgg gta   tta gac ggt cgc aca   act ttg ctt tta atg   aca tcc atg   67690
Arg Val   Leu Asp Gly Arg Thr   Thr Leu Leu Leu Met   Thr Ser Met
11770                     11775                11780

tgt acg   gca gct cac gcc acg   caa gca gca ctt aac   ata caa gaa   67735
Cys Thr   Ala Ala His Ala Thr   Gln Ala Ala Leu Asn   Ile Gln Glu
11785                     11790                11795

ggc ctg   gca tac tta aat cct   tca aaa cac atg ttt   aca ata cca   67780
Gly Leu   Ala Tyr Leu Asn Pro   Ser Lys His Met Phe   Thr Ile Pro
11800                     11805                11810

aac gta   tac agt cct tgt atg   ggt tcc ctt cgt aca   gac ctc acg   67825
Asn Val   Tyr Ser Pro Cys Met   Gly Ser Leu Arg Thr   Asp Leu Thr
11815                     11820                11825

gaa gag   att cat gtt atg aat   ctc ctg tcg gca ata   cca aca cgc   67870
Glu Glu   Ile His Val Met Asn   Leu Leu Ser Ala Ile   Pro Thr Arg
11830                     11835                11840

cca gga   ctt aac gag gta ttg   cat acc caa cta gac   gaa tct gaa   67915
Pro Gly   Leu Asn Glu Val Leu   His Thr Gln Leu Asp   Glu Ser Glu
11845                     11850                11855

ata ttc   gac gcg gca ttt aaa   acc atg atg att ttt   acc aca tgg   67960
Ile Phe   Asp Ala Ala Phe Lys   Thr Met Met Ile Phe   Thr Thr Trp
11860                     11865                11870

act gcc   aaa gat ttg cat ata   ctc cac acc cat gta   cca gaa gta   68005
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Thr Ala    Lys Asp Leu His Ile    Leu His Thr His Val    Pro Glu Val
11875                      11880                11885


ttt acg    tgt caa gat gca gcc    gcg cgt aac gga gaa    tat gtg ctc    68050
Phe Thr    Cys Gln Asp Ala Ala    Ala Arg Asn Gly Glu    Tyr Val Leu
11890                      11895                11900


att ctt    cca gct gtc cag gga    cac agt tat gtg att    aca cga aac    68095
Ile Leu    Pro Ala Val Gln Gly    His Ser Tyr Val Ile    Thr Arg Asn
11905                      11910                11915


aaa cct    caa agg ggt ttg gta    tat tcc ctg gca gat    gtg gat gta    68140
Lys Pro    Gln Arg Gly Leu Val    Tyr Ser Leu Ala Asp    Val Asp Val
11920                      11925                11930


tat aac    ccc ata tcc gtt gtt    tat tta agc agg gat    act tgc gtg    68185
Tyr Asn    Pro Ile Ser Val Val    Tyr Leu Ser Arg Asp    Thr Cys Val
11935                      11940                11945


tct gaa    cat ggt gtc ata gag    acg gtc gca ctg ccc    cat ccg gac    68230
Ser Glu    His Gly Val Ile Glu    Thr Val Ala Leu Pro    His Pro Asp
11950                      11955                11960


aat tta    aaa gaa tgt ttg tat    tgc gga agt gtt ttt    ctt agg tat    68275
Asn Leu    Lys Glu Cys Leu Tyr    Cys Gly Ser Val Phe    Leu Arg Tyr
11965                      11970                11975


cta acc    acg ggg gcg att atg    gat ata att att att    gac agc aaa    68320
Leu Thr    Thr Gly Ala Ile Met    Asp Ile Ile Ile Ile    Asp Ser Lys
11980                      11985                11990


gat aca    gaa cga caa cta gcc    gct atg gga aac tcc    aca att cca    68365
Asp Thr    Glu Arg Gln Leu Ala    Ala Met Gly Asn Ser    Thr Ile Pro
11995                      12000                12005


ccc ttc    aat cca gac atg cac    ggg gat gac tct aag    gct gtg ttg    68410
Pro Phe    Asn Pro Asp Met His    Gly Asp Asp Ser Lys    Ala Val Leu
12010                      12015                12020


ttg ttt    cca aac gga act gtg    gta acg ctt cta gga    ttc gaa cga    68455
Leu Phe    Pro Asn Gly Thr Val    Val Thr Leu Leu Gly    Phe Glu Arg
12025                      12030                12035


cga caa    gcc ata cga atg tcg    gga caa tac ctt ggg    gcc tct tta    68500
Arg Gln    Ala Ile Arg Met Ser    Gly Gln Tyr Leu Gly    Ala Ser Leu
12040                      12045                12050


gga ggg    gcg ttt ctg gcg gta    gtg ggg ttt ggt att    atc gga tgg    68545
Gly Gly    Ala Phe Leu Ala Val    Val Gly Phe Gly Ile    Ile Gly Trp
12055                      12060                12065


atg tta    tgt gga aat tcc cgc    ctt cga gaa tat aat    aaa ata cct    68590
Met Leu    Cys Gly Asn Ser Arg    Leu Arg Glu Tyr Asn    Lys Ile Pro
12070                      12075                12080


ctg aca    taa aaaacatgta taataaaaag tcactataaa cgtattctct              68639
Leu Thr
12085


acaatacttt attcgcgaat aatacacact acctttgggt tttttcccg tccccaaatg      68699
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gtgtttggtg cactctacca aaaaatagag cgcctaaata tgctatataa cgcctcccag   68759

caaaatacgg ttcaaaggca ttacccgata ttgtattgta gtacagggca atgggaattg   68819

atgatcccaa taaacggcat agacgcacag cgccgttata gcagggqtct ccagagtaca   68879

gggtatctaa gtaccgggat atctcatact catgcctttc cgtgacagaa acatcaaccg   68939

gaacagtatc cgataaacca actcctgttt ttgcaaggcg taaaattcgc acaccttcct   68999

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aagtttcagc caacgtgcca ataaagccca cttccctcaa gaggctgttt gctgtatcca   69119

caatggtccg tattaaatct tgagcaactt gatccgtgtc atcatcactg ggtaacgcgt   69179

taacataact acgcgttaaa tcttcaataa cggcataaca attaaacgct tcccaccgag   69239

acagtatata ttgaacaatc acgaaccgtt gacaggacgt cagatcacgt ccgtaagcat   69299

gcccgaaaaa tggaagttcc ccccgttcgc catataccgc aacaactgca gtatatatcg   69359

tctcacgggc ttcattaagt tcatcttcaa gtccaggcca ttttctggct ttaaatataa   69419

cctcgtccgc aaaaaaaacc gcacatgata acgcgcggat acaatgagta gtggctttat   69479

ggcgaggatc ccaaatgtcc attacccggg ggatggtcct aatctgtaca aagttactta   69539

gtgtaatatg atcggacttc ttacgccgtc taggctgttt ctcagaatac ggttcacccg   69599

aaatcggcac atcatctgct tttacgtctt ccgtaaccac atcagcagcg cgccgactaa   69659

caattatact tgttttttca tcgtcgttac ttccgttaag cgcgtctcgt atctcgggcg   69719

tcccgtcgaa taatccactc actagctcct gcaaactttc tggtaactcc aacatacgca   69779

tatacaccaa tgaaaaactg gcttcgtttg gtacgtacat aaagccattt gtggtattaa   69839

tggcggtggg tgttggaaac aattttagct tattctcgcg cgtaacatct accccccgcca   69899

ccaatgttaa atgcgtcacg gggagggaca cgagataatc tgcgagcgta gggtcctcca   69959

cttcaacatc aaatgttccg caaaggtcgc gatccaccgc ccccgatccc gctgcaagta   70019

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gaacaacatg tccaaatttt gcgatctcgc ctccatgttt gcggggtatg gaaattaagc   70199

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tataagatac ggttgaatga tatggaaatt ccatattaaa gcgtttatcg gaacattaac   70319

ctcgaacttg ccgtcccgtg atcgtgtgat cgccaacctt aggtccacac cgaatatgag   70379

aaatatataa ctacacgcaa acattcaaaa caccgtggta tcattaacgt catatgaaaa   70439

gatccaatca atccaatcaa ccacacctcc taccgtttag cacgtcagct atgtgacatg   70499
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ctccaaacat acgtaaacat ttagagaggg tgttataaca gtctgtcagg cggggtatat   70559

tctacataat acaaggatcg gctttaactt tgtcaacatt tttactttgg actataaact   70619

gcgactgaac gtt atg aac cca ccc caa   gcc cgc gtc tcg gaa   cag   70665
            Met Asn Pro Pro Gln   Ala Arg Val Ser Glu   Gln
                     12090   12095

aca aag gac ttg   ctt agc gtt atg gtt   aac cag cac ccc gaa   gag   70710
Thr Lys Asp Leu   Leu Ser Val Met Val   Asn Gln His Pro Glu   Glu
         12100   12105   12110

gac gca aaa gtg   tgt aaa tcc agt gat   aat tca ccg ctt tat   aac   70755
Asp Ala Lys Val   Cys Lys Ser Ser Asp   Asn Ser Pro Leu Tyr   Asn
         12115   12120   12125

acc atg gtt atg   tta tcg tat ggg ggt   gat acg gac tta cta   tta   70800
Thr Met Val Met   Leu Ser Tyr Gly Gly   Asp Thr Asp Leu Leu   Leu
         12130   12135   12140

agc tct gca tgt   acc cgc aca tct acc   gta aac agg tcg gcg   ttt   70845
Ser Ser Ala Cys   Thr Arg Thr Ser Thr   Val Asn Arg Ser Ala   Phe
         12145   12150   12155

acg caa cac tcc   gtg ttt tat att ata   tcc acg gtg ttg att   caa   70890
Thr Gln His Ser   Val Phe Tyr Ile Ile   Ser Thr Val Leu Ile   Gln
         12160   12165   12170

cca ata tgt tgt   atc ttc ttt ttt ttt   tac tat aaa gcg aca   cgc   70935
Pro Ile Cys Cys   Ile Phe Phe Phe Phe   Tyr Tyr Lys Ala Thr   Arg
         12175   12180   12185

tgt atg ctc tta   ttc aca gcc ggg tta   ctt ctg acg att cta   cat   70980
Cys Met Leu Leu   Phe Thr Ala Gly Leu   Leu Leu Thr Ile Leu   His
         12190   12195   12200

cac ttt cga ctt   att att atg tta ttg   tgt gtc tac aga aat   ata   71025
His Phe Arg Leu   Ile Ile Met Leu Leu   Cys Val Tyr Arg Asn   Ile
         12205   12210   12215

cga tca gac ctg   cta ccc tta tct aca   tcc cag caa ctg ctg   ctt   71070
Arg Ser Asp Leu   Leu Pro Leu Ser Thr   Ser Gln Gln Leu Leu   Leu
         12220   12225   12230

gga att att gtt   gtg act cga aca atg   cta ttt tgt att acg   gcg   71115
Gly Ile Ile Val   Val Thr Arg Thr Met   Leu Phe Cys Ile Thr   Ala
         12235   12240   12245

tat tat act ctt   ttt ata gac acc cgg   gtg ttc ttt ttg att   acc   71160
Tyr Tyr Thr Leu   Phe Ile Asp Thr Arg   Val Phe Phe Leu Ile   Thr
         12250   12255   12260

gga cac ttg caa   agt gag gtt att ttt   cca gat agc gtt tca   aaa   71205
Gly His Leu Gln   Ser Glu Val Ile Phe   Pro Asp Ser Val Ser   Lys
         12265   12270   12275

ata ctt cct gtg   tcg tgg ggt cca agt   cca gcc gtg tta ctg   gta   71250
Ile Leu Pro Val   Ser Trp Gly Pro Ser   Pro Ala Val Leu Leu   Val
         12280   12285   12290

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atg gcg gca gtt     att tac gct atg gac     tgt ttg gtg gac acg     gta     71295
Met Ala Ala Val     Ile Tyr Ala Met Asp     Cys Leu Val Asp Thr     Val
        12295                   12300                   12305

tcc ttt att ggg     cca agg gtg tgg gtc     cgt gtt atg tta aaa     aca     71340
Ser Phe Ile Gly     Pro Arg Val Trp Val     Arg Val Met Leu Lys     Thr
        12310                   12315                   12320

tct att tcg ttt     tag tccatttcaa taaatgtact ataattgttc agtctaaaaa        71395
Ser Ile Ser Phe
        12325

taatgttggg tatttataat taccgccccc gtgttacttg gaaacaccca tacatatgtt         71455

ccactctaca tcaaacttct cgcagttttc ttgttcccgc acacgtttac acgtccggat         71515

tcaagtcgca acgctgctga caaa atg aca acg gtt tca     tgt ccc gct aac         71566
                          Met Thr Thr Val Ser     Cys Pro Ala Asn
                                   12330

gtg     att act aca acg gaa     tct gat cgt att gct     ggg tta ttt aac     71611
Val     Ile Thr Thr Thr Glu     Ser Asp Arg Ile Ala     Gly Leu Phe Asn
12335                   12340                   12345

atc     cca gcg ggg atc att     cca act gga aat gtg     ctg tca acc ata     71656
Ile     Pro Ala Gly Ile Ile     Pro Thr Gly Asn Val     Leu Ser Thr Ile
12350                   12355                   12360

gag     gtg tgt gca cac cgt     tgc att ttt gat ttt     ttt aaa caa ata     71701
Glu     Val Cys Ala His Arg     Cys Ile Phe Asp Phe     Phe Lys Gln Ile
12365                   12370                   12375

cga     tca gat gat aac agc     ctt tac tcg gct caa     ttc gat att ctt     71746
Arg     Ser Asp Asp Asn Ser     Leu Tyr Ser Ala Gln     Phe Asp Ile Leu
12380                   12385                   12390

ttg     ggg aca tac tgc aat     aca tta aac ttt gtg     cgt ttt cta gaa     71791
Leu     Gly Thr Tyr Cys Asn     Thr Leu Asn Phe Val     Arg Phe Leu Glu
12395                   12400                   12405

ctt     gga ctg tct gtc gct     tgc atc tgt act aaa     ttt ccg gag ctg     71836
Leu     Gly Leu Ser Val Ala     Cys Ile Cys Thr Lys     Phe Pro Glu Leu
12410                   12415                   12420

gct     tac gtg cga gat ggc     gtt att caa ttt gag     gta caa caa ccc     71881
Ala     Tyr Val Arg Asp Gly     Val Ile Gln Phe Glu     Val Gln Gln Pro
12425                   12430                   12435

atg     ata gca cgt gat ggc     cca cat ccc gtc gat     cag cct gtt cat     71926
Met     Ile Ala Arg Asp Gly     Pro His Pro Val Asp     Gln Pro Val His
12440                   12445                   12450

aat     tat atg gtt aag cgg     ata cac aag cgt tcg     tta agc gct gcg     71971
Asn     Tyr Met Val Lys Arg     Ile His Lys Arg Ser     Leu Ser Ala Ala
12455                   12460                   12465

ttt     gca att gca tcg gaa     gcg ttg agt ttg tta     agt aac aca tat     72016
Phe     Ala Ile Ala Ser Glu     Ala Leu Ser Leu Leu     Ser Asn Thr Tyr
12470                   12475                   12480
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gtc   gat ggg aca gag att   gac tca tcg tta cgt   ata aga gct atc   72061
Val   Asp Gly Thr Glu Ile   Asp Ser Ser Leu Arg   Ile Arg Ala Ile
12485                 12490                 12495

caa   cag atg gct cgt aat   tta cgc acc gtt ttg   gac tca ttt gaa   72106
Gln   Gln Met Ala Arg Asn   Leu Arg Thr Val Leu   Asp Ser Phe Glu
12500                 12505                 12510

cga   ggc act gcc gat caa   ctt ctt ggt gtt cta   ttg gag aaa gcc   72151
Arg   Gly Thr Ala Asp Gln   Leu Leu Gly Val Leu   Leu Glu Lys Ala
12515                 12520                 12525

cca   ccg cta tcg ctg ctt   tca cca att aat aaa   ttc caa ccc gag   72196
Pro   Pro Leu Ser Leu Leu   Ser Pro Ile Asn Lys   Phe Gln Pro Glu
12530                 12535                 12540

gga   cat cta aat cgt gtt   gca cgc gcg gcc cta   ctt tcg gac ctc   72241
Gly   His Leu Asn Arg Val   Ala Arg Ala Ala Leu   Leu Ser Asp Leu
12545                 12550                 12555

aaa   cgt aga gtc tgt gcg   gat atg ttt ttt atg   acc cga cac gcc   72286
Lys   Arg Arg Val Cys Ala   Asp Met Phe Phe Met   Thr Arg His Ala
12560                 12565                 12570

agg   gaa cct agg ctg atc   tct gcg tat ctg tcg   gat atg gtt tcg   72331
Arg   Glu Pro Arg Leu Ile   Ser Ala Tyr Leu Ser   Asp Met Val Ser
12575                 12580                 12585

tgc   acc caa cca tcg gtg   atg gta tca cga ata   act cat aca aac   72376
Cys   Thr Gln Pro Ser Val   Met Val Ser Arg Ile   Thr His Thr Asn
12590                 12595                 12600

act   cgc gga cgg cag gtt   gac ggt gtg ttg gta   aca aca gca acc   72421
Thr   Arg Gly Arg Gln Val   Asp Gly Val Leu Val   Thr Thr Ala Thr
12605                 12610                 12615

tta   aaa cgg caa cta tta   cag gga att tta caa   att gac gac acc   72466
Leu   Lys Arg Gln Leu Leu   Gln Gly Ile Leu Gln   Ile Asp Asp Thr
12620                 12625                 12630

gcc   gct gac gta cca gta   aca tat ggc gaa atg   gtt cta cag ggg   72511
Ala   Ala Asp Val Pro Val   Thr Tyr Gly Glu Met   Val Leu Gln Gly
12635                 12640                 12645

aca   aac ttg gta acc gcc   ctt gtg atg gga aag   gcc gtc cgc gga   72556
Thr   Asn Leu Val Thr Ala   Leu Val Met Gly Lys   Ala Val Arg Gly
12650                 12655                 12660

atg   gat gat gta gcc cgc   cat ctc ctt gat ata   acc gac cct aac   72601
Met   Asp Asp Val Ala Arg   His Leu Leu Asp Ile   Thr Asp Pro Asn
12665                 12670                 12675

acg   tta aac ata ccg tct   ata ccc cca caa tcc   aac tcc gat tca   72646
Thr   Leu Asn Ile Pro Ser   Ile Pro Pro Gln Ser   Asn Ser Asp Ser
12680                 12685                 12690

acg   aca gct ggg ctt ccg   gtt aac gcc cgt gtt   cct gcg gat tta   72691
Thr   Thr Ala Gly Leu Pro   Val Asn Ala Arg Val   Pro Ala Asp Leu
12695                 12700                 12705
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gtg   att gtt ggg gat aaa   ctt gta ttc tta gaa   gca tta gaa cgg   72736
Val   Ile Val Gly Asp Lys   Leu Val Phe Leu Glu   Ala Leu Glu Arg
12710               12715                 12720

cgg   gtc tac caa gct acg   cgc gtt gcc tac cct   ctt att gga aat   72781
Arg   Val Tyr Gln Ala Thr   Arg Val Ala Tyr Pro   Leu Ile Gly Asn
12725               12730                 12735

ata   gat att acg ttt atc   atg cca atg gga gtg   ttt cag gca aac   72826
Ile   Asp Ile Thr Phe Ile   Met Pro Met Gly Val   Phe Gln Ala Asn
12740               12745                 12750

tcc   atg gac aga tat aca   cga cac gcc ggc gat   ttt tca act gta   72871
Ser   Met Asp Arg Tyr Thr   Arg His Ala Gly Asp   Phe Ser Thr Val
12755               12760                 12765

tcc   gaa cag gat cca cgt   caa ttt cca ccc caa   ggg att ttt ttt   72916
Ser   Glu Gln Asp Pro Arg   Gln Phe Pro Pro Gln   Gly Ile Phe Phe
12770               12775                 12780

tat   aat aaa gat ggg ata   tta aca cag ttg act   ctt cgt gat gca   72961
Tyr   Asn Lys Asp Gly Ile   Leu Thr Gln Leu Thr   Leu Arg Asp Ala
12785               12790                 12795

atg   ggt acc atc tgc cac   agt tca ttg ctt gat   gtc gag gcc aca   73006
Met   Gly Thr Ile Cys His   Ser Ser Leu Leu Asp   Val Glu Ala Thr
12800               12805                 12810

ctt   gtt gcc ctc cgc caa   caa cat tta gat cgt   cag tgt tat ttt   73051
Leu   Val Ala Leu Arg Gln   Gln His Leu Asp Arg   Gln Cys Tyr Phe
12815               12820                 12825

ggt   gta tac gtg gcc gag   ggt aca gag gac aca   ttg gat gtt caa   73096
Gly   Val Tyr Val Ala Glu   Gly Thr Glu Asp Thr   Leu Asp Val Gln
12830               12835                 12840

atg   ggg agg ttt atg gaa   acg tgg gca gat atg   atg cct cat cac   73141
Met   Gly Arg Phe Met Glu   Thr Trp Ala Asp Met   Met Pro His His
12845               12850                 12855

cct   cat tgg gta aac gaa   cat tta aca att cta   cag ttt ata gct   73186
Pro   His Trp Val Asn Glu   His Leu Thr Ile Leu   Gln Phe Ile Ala
12860               12865                 12870

ccg   agc aac ccg cgt cta   agg ttt gaa tta aac   ccc gcc ttt gat   73231
Pro   Ser Asn Pro Arg Leu   Arg Phe Glu Leu Asn   Pro Ala Phe Asp
12875               12880                 12885

ttt   ttt gtt gca ccg ggg   gac gta gac ctt ccc   gga ccg cag cgt   73276
Phe   Phe Val Ala Pro Gly   Asp Val Asp Leu Pro   Gly Pro Gln Arg
12890               12895                 12900

ccc   ccg gaa gcc atg cca   acc gtt aac gca aca   tta cgg att atc   73321
Pro   Pro Glu Ala Met Pro   Thr Val Asn Ala Thr   Leu Arg Ile Ile
12905               12910                 12915

aac   gga aac att ccc gtg   cct cta tgt ccc att   tca ttt cga gac   73366
Asn   Gly Asn Ile Pro Val   Pro Leu Cys Pro Ile   Ser Phe Arg Asp
12920               12925                 12930
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tgt   cgc gga acc caa ctc   ggt ttg gga aga cat   aca atg acc ccg   73411
Cys   Arg Gly Thr Gln Leu   Gly Leu Gly Arg His   Thr Met Thr Pro
12935                 12940                 12945

gca   acc att aaa gcc gta   aag gat aca ttt gaa   gac cgc gca tac   73456
Ala   Thr Ile Lys Ala Val   Lys Asp Thr Phe Glu   Asp Arg Ala Tyr
12950                 12955                 12960

cca   act att ttc tac atg   cta gag gct gtt att   cat gga aac gaa   73501
Pro   Thr Ile Phe Tyr Met   Leu Glu Ala Val Ile   His Gly Asn Glu
12965                 12970                 12975

aga   aac ttc tgt gcg tta   ctg cga ctg tta aca   cag tgt att cgc   73546
Arg   Asn Phe Cys Ala Leu   Leu Arg Leu Leu Thr   Gln Cys Ile Arg
12980                 12985                 12990

ggg   tat tgg gag caa tcc   cac agg gtg gca ttt   gta aat aac ttt   73591
Gly   Tyr Trp Glu Gln Ser   His Arg Val Ala Phe   Val Asn Asn Phe
12995                 13000                 13005

cac   atg tta atg tac ata   act aca tat ctc gga   aac ggt gag ctt   73636
His   Met Leu Met Tyr Ile   Thr Thr Tyr Leu Gly   Asn Gly Glu Leu
13010                 13015                 13020

ccc   gaa gtc tgt att aat   ata tat cgg gat tta   ctg cag cat gta   73681
Pro   Glu Val Cys Ile Asn   Ile Tyr Arg Asp Leu   Leu Gln His Val
13025                 13030                 13035

aga   gca tta cgc caa act   ata acc gat ttt aca   ata caa gga gag   73726
Arg   Ala Leu Arg Gln Thr   Ile Thr Asp Phe Thr   Ile Gln Gly Glu
13040                 13045                 13050

ggc   cat aac ggc gag acc   tcg gaa gcg cta aat   aac atc ctt acg   73771
Gly   His Asn Gly Glu Thr   Ser Glu Ala Leu Asn   Asn Ile Leu Thr
13055                 13060                 13065

gat   gac acg ttt att gca   cct att cta tgg gat   tgt gat gcg tta   73816
Asp   Asp Thr Phe Ile Ala   Pro Ile Leu Trp Asp   Cys Asp Ala Leu
13070                 13075                 13080

ata   tac cgt gat gaa gcc   gcc cga gac cga ctc   ccc gca att cgt   73861
Ile   Tyr Arg Asp Glu Ala   Ala Arg Asp Arg Leu   Pro Ala Ile Arg
13085                 13090                 13095

gta   agc ggg cga aac gga   tac caa gcc ctt cac   ttt gtg gat atg   73906
Val   Ser Gly Arg Asn Gly   Tyr Gln Ala Leu His   Phe Val Asp Met
13100                 13105                 13110

gcc   ggg cat aac ttc caa   cga cgc gat aat gtg   tta atc cac ggg   73951
Ala   Gly His Asn Phe Gln   Arg Arg Asp Asn Val   Leu Ile His Gly
13115                 13120                 13125

aga   ccc gtt cgg gga gac   acg ggt cag ggt att   ccc att act cca   73996
Arg   Pro Val Arg Gly Asp   Thr Gly Gln Gly Ile   Pro Ile Thr Pro
13130                 13135                 13140

cac   cat gac cgt gaa tgg   ggt att ctc tcc aag   att tac tac tat   74041
His   His Asp Arg Glu Trp   Gly Ile Leu Ser Lys   Ile Tyr Tyr Tyr
13145                 13150                 13155
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att   gtc att cct gca ttt   tcc cgc ggt tcc tgt   tgt aca atg ggc   74086
Ile   Val Ile Pro Ala Phe   Ser Arg Gly Ser Cys   Cys Thr Met Gly
13160              13165              13170

gtg   cgt tat gat cgc cta   tac cct gcg tta cag   gca gtt atc gtt   74131
Val   Arg Tyr Asp Arg Leu   Tyr Pro Ala Leu Gln   Ala Val Ile Val
13175              13180              13185

ccg   gaa att ccc gct gat   gaa gaa gcc cca act   acc cca gaa gat   74176
Pro   Glu Ile Pro Ala Asp   Glu Glu Ala Pro Thr   Thr Pro Glu Asp
13190              13195              13200

cca   aga cac cct ctt cac   gca cac caa ctc gtt   ccg aac tct ctt   74221
Pro   Arg His Pro Leu His   Ala His Gln Leu Val   Pro Asn Ser Leu
13205              13210              13215

aac   gtt tac ttc cat aat   gca cac cta acc gtt   gat ggt gat gca   74266
Asn   Val Tyr Phe His Asn   Ala His Leu Thr Val   Asp Gly Asp Ala
13220              13225              13230

ttg   ctc aca cta caa gag   tta atg gga gat atg   gct gaa cga acg   74311
Leu   Leu Thr Leu Gln Glu   Leu Met Gly Asp Met   Ala Glu Arg Thr
13235              13240              13245

acg   gcc att tta gta tca   agc gcc ccc gat gcg   gga gcc gcc acg   74356
Thr   Ala Ile Leu Val Ser   Ser Ala Pro Asp Ala   Gly Ala Ala Thr
13250              13255              13260

gca   aca acc aga aat atg   aga ata tat gac gga   gcg ctt tac cat   74401
Ala   Thr Thr Arg Asn Met   Arg Ile Tyr Asp Gly   Ala Leu Tyr His
13265              13270              13275

ggc   ctt att atg atg gca   tat cag gcg tac gat   gaa acc att gca   74446
Gly   Leu Ile Met Met Ala   Tyr Gln Ala Tyr Asp   Glu Thr Ile Ala
13280              13285              13290

acg   ggt act ttt ttt tat   ccc gtt ccg gtc aac   cct ctg ttt gca   74491
Thr   Gly Thr Phe Phe Tyr   Pro Val Pro Val Asn   Pro Leu Phe Ala
13295              13300              13305

tgt   ccg gaa cat ttg gca   tca ttg cgt gga atg   aca aat gct agg   74536
Cys   Pro Glu His Leu Ala   Ser Leu Arg Gly Met   Thr Asn Ala Arg
13310              13315              13320

cgg   gtt ttg gca aaa atg   gta cca cca atc cct   cct ttt ctg gga   74581
Arg   Val Leu Ala Lys Met   Val Pro Pro Ile Pro   Pro Phe Leu Gly
13325              13330              13335

gcc   aac cac cac gca act   ata cgc caa ccc gtt   gcc tac cat gta   74626
Ala   Asn His His Ala Thr   Ile Arg Gln Pro Val   Ala Tyr His Val
13340              13345              13350

acg   cat agt aag tcg gat   ttt aat act ctt aca   tat tct ctt ctt   74671
Thr   His Ser Lys Ser Asp   Phe Asn Thr Leu Thr   Tyr Ser Leu Leu
13355              13360              13365

gga   ggg tat ttt aag ttt   aca cca ata tct ctt   aca cat caa cta   74716
Gly   Gly Tyr Phe Lys Phe   Thr Pro Ile Ser Leu   Thr His Gln Leu
13370              13375              13380
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cga    acg gga ttt cac ccc    ggg att gcc ttt acc    gta gtg cgc cag    74761
Arg    Thr Gly Phe His Pro    Gly Ile Ala Phe Thr    Val Val Arg Gln
13385                  13390                  13395

gat    cgc ttt gcc aca gag    caa ctt tta tat gcc    gag cgt gct tct    74806
Asp    Arg Phe Ala Thr Glu    Gln Leu Leu Tyr Ala    Glu Arg Ala Ser
13400                  13405                  13410

gaa    tcg tac ttt gtc gga    caa atc caa gta cac    cat cat gat gct    74851
Glu    Ser Tyr Phe Val Gly    Gln Ile Gln Val His    His His Asp Ala
13415                  13420                  13425

att    ggg ggg gta aac ttt    acc cta acc caa ccc    aga gct cac gtg    74896
Ile    Gly Gly Val Asn Phe    Thr Leu Thr Gln Pro    Arg Ala His Val
13430                  13435                  13440

gac    ctg gga gtc ggg tat    aca gct gta tgt gcc    aca gca gcc ctg    74941
Asp    Leu Gly Val Gly Tyr    Thr Ala Val Cys Ala    Thr Ala Ala Leu
13445                  13450                  13455

cga    tgc cct ctc acg gat    atg ggc aat act gcc    caa aat ctt ttt    74986
Arg    Cys Pro Leu Thr Asp    Met Gly Asn Thr Ala    Gln Asn Leu Phe
13460                  13465                  13470

ttt    tca cga gga gga gtg    cca atg tta cat gat    aac gtt acc gaa    75031
Phe    Ser Arg Gly Gly Val    Pro Met Leu His Asp    Asn Val Thr Glu
13475                  13480                  13485

tcg    ttg cgt cgt ata aca    gca tcg ggg ggt cgc    tta aat ccc acc    75076
Ser    Leu Arg Arg Ile Thr    Ala Ser Gly Gly Arg    Leu Asn Pro Thr
13490                  13495                  13500

gaa    ccc cta ccc atc ttc    ggc gga cta cgt cct    gct aca tcg gca    75121
Glu    Pro Leu Pro Ile Phe    Gly Gly Leu Arg Pro    Ala Thr Ser Ala
13505                  13510                  13515

gga    att gca cga ggg caa    gcc tct gtg tgt gag    ttt gtg gcc atg    75166
Gly    Ile Ala Arg Gly Gln    Ala Ser Val Cys Glu    Phe Val Ala Met
13520                  13525                  13530

ccg    gtg tcc act gac cta    caa tat ttt aga act    gca tgc aat cct    75211
Pro    Val Ser Thr Asp Leu    Gln Tyr Phe Arg Thr    Ala Cys Asn Pro
13535                  13540                  13545

aga    ggt cga gca tct gga    atg tta tat atg ggt    gac cgt gac gcc    75256
Arg    Gly Arg Ala Ser Gly    Met Leu Tyr Met Gly    Asp Arg Asp Ala
13550                  13555                  13560

gac    ata gag gct ata atg    ttt gat cac aca caa    tcg gat gtt gct    75301
Asp    Ile Glu Ala Ile Met    Phe Asp His Thr Gln    Ser Asp Val Ala
13565                  13570                  13575

tat    aca gat cga gca act    ctt aac cca tgg gca    tca caa aaa cat    75346
Tyr    Thr Asp Arg Ala Thr    Leu Asn Pro Trp Ala    Ser Gln Lys His
13580                  13585                  13590

tca    tac ggt gac agg cta    tac aac gga aca tac    aac ctt aca ggc    75391
Ser    Tyr Gly Asp Arg Leu    Tyr Asn Gly Thr Tyr    Asn Leu Thr Gly
13595                  13600                  13605
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gct    tct cct atc tac agc    cca tgc ttt aag ttt    ttt aca cca gcg    75436
Ala    Ser Pro Ile Tyr Ser    Pro Cys Phe Lys Phe    Phe Thr Pro Ala
13610                          13615              13620

gag    gtt aac act aat tgt    aat aca ctg gat cgg    ctt cta atg gag    75481
Glu    Val Asn Thr Asn Cys    Asn Thr Leu Asp Arg    Leu Leu Met Glu
13625                          13630              13635

gca    aag gct gtg gcg tcg    caa agc tcc acc gac    act gaa tat caa    75526
Ala    Lys Ala Val Ala Ser    Gln Ser Ser Thr Asp    Thr Glu Tyr Gln
13640                          13645              13650

ttt    aaa cgc cct ccc ggt    tct acc gaa atg aca    cag gat ccg tgt    75571
Phe    Lys Arg Pro Pro Gly    Ser Thr Glu Met Thr    Gln Asp Pro Cys
13655                          13660              13665

ggc    ctt ttt caa gaa gca    tat cca cca cta tgc    tca agc gat gcg    75616
Gly    Leu Phe Gln Glu Ala    Tyr Pro Pro Leu Cys    Ser Ser Asp Ala
13670                          13675              13680

gcc    atg tta cga acg gct    cac gcg gga gaa acc    ggg gca gat gaa    75661
Ala    Met Leu Arg Thr Ala    His Ala Gly Glu Thr    Gly Ala Asp Glu
13685                          13690              13695

gtt    cac tta gcc caa tat    ctg att cga gac gcg    tcg ccc ctt agg    75706
Val    His Leu Ala Gln Tyr    Leu Ile Arg Asp Ala    Ser Pro Leu Arg
13700                          13705              13710

gga    tgt ctt cct ctt ccg    cga taa tttcaccacg cccacatacc           75750
Gly    Cys Leu Pro Leu Pro    Arg
13715                          13720

cactcccaat aaaagccctg tagagcgcat tggcatctta cttgagattt ggatacgctc     75810

ggccgacttg gtctgtttca cgcttcctta aacaac atg gct atg cca    ttt gag     75864
                                        Met Ala Met Pro    Phe Glu
                                                           13725

ata gag gta    ttg tta cca gga gaa    cta tcc ccg gcg gaa    aca tct     75909
Ile Glu Val    Leu Leu Pro Gly Glu    Leu Ser Pro Ala Glu    Thr Ser
        13730                  13735                  13740

gca tta cag    aaa tgt gag gga aaa    att att acc ttc tca    acc ctg     75954
Ala Leu Gln    Lys Cys Glu Gly Lys    Ile Ile Thr Phe Ser    Thr Leu
        13745                  13750                  13755

cgt cat cga    gct tca ctg gtg gat    ata gcg ctg tcg tca    tat tac     75999
Arg His Arg    Ala Ser Leu Val Asp    Ile Ala Leu Ser Ser    Tyr Tyr
        13760                  13765                  13770

att aac ggt    gct cca cca gac acg    ctc tcg ctg tta gag    gca tac     76044
Ile Asn Gly    Ala Pro Pro Asp Thr    Leu Ser Leu Leu Glu    Ala Tyr
        13775                  13780                  13785

cga atg cga    ttc gcg gca gtt ata    aca cgg gtc atc ccg    gga aag     76089
Arg Met Arg    Phe Ala Ala Val Ile    Thr Arg Val Ile Pro    Gly Lys
        13790                  13795                  13800

ttg ttg gcg    cat gcc att ggc gtg    ggt act cct aca ccc    ggg ttg     76134
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Leu Leu Ala   His Ala Ile Gly Val   Gly Thr Pro Thr Pro   Gly Leu
    13805                   13810                13815

ttt att caa   aat aca tcc ccc gtt   gat ctt tgt aat ggc   gat tac   76179
Phe Ile Gln   Asn Thr Ser Pro Val   Asp Leu Cys Asn Gly   Asp Tyr
    13820                   13825                13830

atc tgc tta   ctt cct ccg gtt ttc   ggg tcc gca gac tca   att cgc   76224
Ile Cys Leu   Leu Pro Pro Val Phe   Gly Ser Ala Asp Ser   Ile Arg
    13835                   13840                13845

ttg gac tct   gta gga ctg gaa att   gtt ttc cct tta acc   atc ccc   76269
Leu Asp Ser   Val Gly Leu Glu Ile   Val Phe Pro Leu Thr   Ile Pro
    13850                   13855                13860

cag acc tta   atg cga gaa atc atc   gcc aaa gtg gtt gca   cgg gcc   76314
Gln Thr Leu   Met Arg Glu Ile Ile   Ala Lys Val Val Ala   Arg Ala
    13865                   13870                13875

gtt gag cgc   acg gcc gcg ggt gct   caa att tta ccc cac   gaa gtt   76359
Val Glu Arg   Thr Ala Ala Gly Ala   Gln Ile Leu Pro His   Glu Val
    13880                   13885                13890

cta cga ggc   gcg gat gtc att tgt   tac aat gga agg cgt   tat gaa   76404
Leu Arg Gly   Ala Asp Val Ile Cys   Tyr Asn Gly Arg Arg   Tyr Glu
    13895                   13900                13905

ctc gaa aca   aat tta caa cat cgg   gac gga tcg gat gcg   gct att   76449
Leu Glu Thr   Asn Leu Gln His Arg   Asp Gly Ser Asp Ala   Ala Ile
    13910                   13915                13920

cgc aca ttg   gtt tta aat cta atg   ttt tcc ata aac gag   gga tgt   76494
Arg Thr Leu   Val Leu Asn Leu Met   Phe Ser Ile Asn Glu   Gly Cys
    13925                   13930                13935

ctg ctt tta   ttg gcg ctg att cca   act ttg tta gtc caa   gga gca   76539
Leu Leu Leu   Leu Ala Leu Ile Pro   Thr Leu Leu Val Gln   Gly Ala
    13940                   13945                13950

cac gac ggt   tat gta aat tta ttg   ata caa acg gcc aat   tgc gtt   76584
His Asp Gly   Tyr Val Asn Leu Leu   Ile Gln Thr Ala Asn   Cys Val
    13955                   13960                13965

aga gaa acc   ggc cag tta att aat   ata ccg cca atg ccg   cgg att   76629
Arg Glu Thr   Gly Gln Leu Ile Asn   Ile Pro Pro Met Pro   Arg Ile
    13970                   13975                13980

caa gac ggc   cat cgc cga ttt ccc   ata tat gaa act att   tca tct   76674
Gln Asp Gly   His Arg Arg Phe Pro   Ile Tyr Glu Thr Ile   Ser Ser
    13985                   13990                13995

tgg ata tca   aca tca tct aga ctg   ggg gat acc ttg gga   act cgc   76719
Trp Ile Ser   Thr Ser Ser Arg Leu   Gly Asp Thr Leu Gly   Thr Arg
    14000                   14005                14010

gca att tta   cgc gtc tgt gtg ttt   gat gga ccc tct act   gtt cat   76764
Ala Ile Leu   Arg Val Cys Val Phe   Asp Gly Pro Ser Thr   Val His
    14015                   14020                14025

ccg gga gac   cgc acg gcc gtg att   caa gtg taa acaggtgtta           76807
Pro Gly Asp   Arg Thr Ala Val Ile   Gln Val
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Pro Gly Asp   Arg Thr Ala Val Ile   Gln Val
       14030                14035

ataaaaacac aaccagtcta gttacatttc acgcgtcttg tttttatttta ataggcataa   76867

acacggaatc cggtatacat gaactgccaa tatacacgga cataattaat gcaaccatca   76927

gatcatctga cattgttccc gtggtacctt tacccgtgta agtttttgtg tctagattac   76987

ccataccgcc tttaattacc tctgtcaggt tatccaactg tttacataga tactccacgg   77047

ggtctacacc taactttact gttagggata caagctcctg tgaggctatt atatttccgg   77107

agttaaatcg tttaacaaaa tagtctacgg ccggcgtttt ttgtttttgt aataaaaaaa   77167

aagggtacgc cacgctacat ccgggaggta tggaatgata aaacagtaac actggagcgg   77227

aagatagcac gtttcccttt tcgaggacag caaactgttg tgctatagcc aacgatatgg   77287

caactgcaga atcctggctg ctgtttccct ctatagaaac gtgtacgttt gtaaatgtat   77347

tggggtgtaa agcgagtatg tggcctaagc attgagtaac gcaacgccct atctcactgg   77407

aagacgtgcc agttaaagct ctaagaaaaa agtgctccaa tccaaatata atccaatccg   77467

acttataacg accaacaatc gctacaccag taccagacgc tcgtgtattt gaggtaaatg   77527

cagggtctac gtaaacgtac aacactgacg ataatatagc acaattcgca acggttgacg   77587

gccgatataa aataaacctc tcacgggcag tttttgtaaa taatggccgg tcaaaccccca   77647

cacccccaga attctgttta cgcccaccta caatttcctg cacgaaggag tcggccataa   77707

ataaatctgc agtgcgccgc atggctccat ccattgtgat gaaaaccggc ttatttaata   77767

cataacacga acaagctgtg acatcgctat gtgctaaaac acgcggcatg tgatcgtcgc   77827

atacatatgt aacaacgttt aacaactgat ccgacgatcc acgtaagtta tacaaaaaac   77887

ttgtacttgc ttttccggta tttgttgatg aaacaaaaat aattttacaa ttggtttgat   77947

ttaaaaatcc gactatagtt tgtacagcat caggtcgaat aaaattagct tcatccacaa   78007

acagaagatt aaaatcttga cctcggatac cctggaacga tagaaagata tatagttacc   78067

ccaccaaagt ttaaatgtat ccttaaatac cacgtacgta aaaatgtttt gaatacgtac   78127

atatttcttt ttttttttcca gtacaaccat atccggtgta ta atg gaa gcc   cat   78181
                                                    Met Glu Ala   His
                                                             14040

ttg gca aat gaa   acc aaa cat gca ctt   tgg cat aat gat cac   aca   78226
Leu Ala Asn Glu   Thr Lys His Ala Leu   Trp His Asn Asp His   Thr
         14045                14050                14055

aaa gga tta cta   cac gtt gtg ata cct   aac gcg ggg ctt att   gcg   78271
Lys Gly Leu Leu   His Val Val Ile Pro   Asn Ala Gly Leu Ile   Ala
         14060                14065                14070

gcc gga ata gat   ccc gca tta ctg att   tta aag aaa ccc gga   caa   78316
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Ala Gly Ile Asp    Pro Ala Leu Leu Ile    Leu Lys Lys Pro Gly    Gln
        14075                   14080                    14085

cgc ttc aag gtt    gaa gta caa aca aga    tat cat gct aca ggt    caa  78361
Arg Phe Lys Val    Glu Val Gln Thr Arg    Tyr His Ala Thr Gly    Gln
        14090                   14095                    14100

tgc gaa ccg tgg    tgt caa gtt ttc gcc    gcg tac att ccc gat    aac  78406
Cys Glu Pro Trp    Cys Gln Val Phe Ala    Ala Tyr Ile Pro Asp    Asn
        14105                   14110                    14115

gcc tta aca aat    ctc tta ata cca aaa    acg gaa cca ttt gtt    tca  78451
Ala Leu Thr Asn    Leu Leu Ile Pro Lys    Thr Glu Pro Phe Val    Ser
        14120                   14125                    14130

cac gtt ttt tcg    gcc acg cat aat tca    ggg gga ttg att tta    tca  78496
His Val Phe Ser    Ala Thr His Asn Ser    Gly Gly Leu Ile Leu    Ser
        14135                   14140                    14145

ttg cct gtt tat    ctt agc ccc ggt tta    ttc ttt gat gca ttt    aac  78541
Leu Pro Val Tyr    Leu Ser Pro Gly Leu    Phe Phe Asp Ala Phe    Asn
        14150                   14155                    14160

gtt gta gcg ata    cga ata aat act gga    aac cgc aag cac cgt    gat  78586
Val Val Ala Ile    Arg Ile Asn Thr Gly    Asn Arg Lys His Arg    Asp
        14165                   14170                    14175

att tgt att atg    tat gca gaa cta atc    cca aac gga acg cgt    tat  78631
Ile Cys Ile Met    Tyr Ala Glu Leu Ile    Pro Asn Gly Thr Arg    Tyr
        14180                   14185                    14190

ttt gct gat gga    caa cgg gta ctt tta    tta tgc aaa cag ctg    att  78676
Phe Ala Asp Gly    Gln Arg Val Leu Leu    Leu Cys Lys Gln Leu    Ile
        14195                   14200                    14205

gcg tat atc cga    tgc acc cct cgt ctt    gca tcg tct ata aaa    ata  78721
Ala Tyr Ile Arg    Cys Thr Pro Arg Leu    Ala Ser Ser Ile Lys    Ile
        14210                   14215                    14220

tac gca gag cat    atg gtg gca gcc atg    ggt gaa tca cac acg    tca  78766
Tyr Ala Glu His    Met Val Ala Ala Met    Gly Glu Ser His Thr    Ser
        14225                   14230                    14235

aat ggg gac aat    att gga ccc gtt tca    tcc ata atc gat ctt    gat  78811
Asn Gly Asp Asn    Ile Gly Pro Val Ser    Ser Ile Ile Asp Leu    Asp
        14240                   14245                    14250

cga cag tta act    tct gga ggt att gat    gac tcc cct gct gaa    aca  78856
Arg Gln Leu Thr    Ser Gly Gly Ile Asp    Asp Ser Pro Ala Glu    Thr
        14255                   14260                    14265

cgc ata cag gaa    aat aat cgg gac gtc    ctt gag cta ata aaa    cgg  78901
Arg Ile Gln Glu    Asn Asn Arg Asp Val    Leu Glu Leu Ile Lys    Arg
        14270                   14275                    14280

gcc gta aac att    gtt aac tcc agg cac    ccc gtc cga cct tct    agt  78946
Ala Val Asn Ile    Val Asn Ser Arg His    Pro Val Arg Pro Ser    Ser
        14285                   14290                    14295

tcc cgc gtt gca    tct ggg ttg ctt caa    agt gca aag ggc cac    gga  78991
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Ser Arg Val Ala    Ser Gly Leu Leu Gln    Ser Ala Lys Gly His    Gly
    14300                      14305                  14310

gcg caa act tcc    aac aca gat ccg atc    aat aac ggt tcc ttt    gat  79036
Ala Gln Thr Ser    Asn Thr Asp Pro Ile    Asn Asn Gly Ser Phe    Asp
    14315                      14320                  14325

ggc gtc ctt gag    ccg cct gga caa ggg    cga ttt acg gga aag    aaa  79081
Gly Val Leu Glu    Pro Pro Gly Gln Gly    Arg Phe Thr Gly Lys    Lys
    14330                      14335                  14340

aac aat tcg tcc    gcc agc atc cca cct    tta caa gac gtt cta    ttg  79126
Asn Asn Ser Ser    Ala Ser Ile Pro Pro    Leu Gln Asp Val Leu    Leu
    14345                      14350                  14355

ttt acc cca gct    tcg aca gaa ccc caa    agt ctt atg gaa tgg    ttc  79171
Phe Thr Pro Ala    Ser Thr Glu Pro Gln    Ser Leu Met Glu Trp    Phe
    14360                      14365                  14370

gac atc tgt tat    gcc caa tta gtt agc    ggg gac act cca gca    gat  79216
Asp Ile Cys Tyr    Ala Gln Leu Val Ser    Gly Asp Thr Pro Ala    Asp
    14375                      14380                  14385

ttc tgg aaa cgg    cgt ccc cta tca att    gta ccg cga cat tac    gca  79261
Phe Trp Lys Arg    Arg Pro Leu Ser Ile    Val Pro Arg His Tyr    Ala
    14390                      14395                  14400

gaa tcc ccc agt    ccg ttg att gta gta    tct tac aac gga tcc    tct  79306
Glu Ser Pro Ser    Pro Leu Ile Val Val    Ser Tyr Asn Gly Ser    Ser
    14405                      14410                  14415

gcc tgg gga gga    cgt att acc gga agt    cca att tta tat cac    tct  79351
Ala Trp Gly Gly    Arg Ile Thr Gly Ser    Pro Ile Leu Tyr His    Ser
    14420                      14425                  14430

gca cag gct att    att gat gct gcg tgt    ata aat gcc cgg gtt    gac  79396
Ala Gln Ala Ile    Ile Asp Ala Ala Cys    Ile Asn Ala Arg Val    Asp
    14435                      14440                  14445

aat ccc caa agc    cta cat gtg aca gct    cgc caa gag cta gtc    gcg  79441
Asn Pro Gln Ser    Leu His Val Thr Ala    Arg Gln Glu Leu Val    Ala
    14450                      14455                  14460

cgt tta ccg ttt    ttg gct aac gtc cta    aat aat caa acc ccc    tta  79486
Arg Leu Pro Phe    Leu Ala Asn Val Leu    Asn Asn Gln Thr Pro    Leu
    14465                      14470                  14475

ccc gcc ttt aaa    cca ggc gcc gaa atg    ttt tta aac cag gta    ttt  79531
Pro Ala Phe Lys    Pro Gly Ala Glu Met    Phe Leu Asn Gln Val    Phe
    14480                      14485                  14490

aaa caa gcg tgt    gtg aca tcg cta acc    caa ggt ctt ata acg    gag  79576
Lys Gln Ala Cys    Val Thr Ser Leu Thr    Gln Gly Leu Ile Thr    Glu
    14495                      14500                  14505

tta caa acg aac    ccg act cta caa caa    ctc atg gaa tat gat    att  79621
Leu Gln Thr Asn    Pro Thr Leu Gln Gln    Leu Met Glu Tyr Asp    Ile
    14510                      14515                  14520

gca gat tct tcc    caa acg gtt att gat    gaa att gta gcc cgc    aca  79666
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Ala Asp Ser Ser    Gln Thr Val Ile Asp    Glu Ile Val Ala Arg    Thr
        14525                    14530                 14535

cca gac ctg att    cag act ata gtt tcg    gtg tta acg gaa atg    tca  79711
Pro Asp Leu Ile    Gln Thr Ile Val Ser    Val Leu Thr Glu Met    Ser
        14540                    14545                 14550

atg gat gcg ttt    tat aac agc tcc ttg    atg tat gcg gtt ttg    gcg  79756
Met Asp Ala Phe    Tyr Asn Ser Ser Leu    Met Tyr Ala Val Leu    Ala
        14555                    14560                 14565

tat ctg tca tct    gta tat aca cga cca    caa ggt ggg ggg tat    ata  79801
Tyr Leu Ser Ser    Val Tyr Thr Arg Pro    Gln Gly Gly Gly Tyr    Ile
        14570                    14575                 14580

ccc tac ctt cac    gct tcc ttc cca tgc    tgg tta ggt aat cgt    tct  79846
Pro Tyr Leu His    Ala Ser Phe Pro Cys    Trp Leu Gly Asn Arg    Ser
        14585                    14590                 14595

ata tat tta ttt    gac tat tat aat tca    gga ggg gaa ata ctt    aag  79891
Ile Tyr Leu Phe    Asp Tyr Tyr Asn Ser    Gly Gly Glu Ile Leu    Lys
        14600                    14605                 14610

ctt tcc aag gtc    ccc gtt ccc gta gcc    tta gaa aag gtt ggt    att  79936
Leu Ser Lys Val    Pro Val Pro Val Ala    Leu Glu Lys Val Gly    Ile
        14615                    14620                 14625

ggt aat tcc aca    caa ctg agg ggt aaa    ttt ata cgc agc gcg    gat  79981
Gly Asn Ser Thr    Gln Leu Arg Gly Lys    Phe Ile Arg Ser Ala    Asp
        14630                    14635                 14640

att gtt gat att    gga att tgt tct aag    tat tta ccc ggt caa    tgt  80026
Ile Val Asp Ile    Gly Ile Cys Ser Lys    Tyr Leu Pro Gly Gln    Cys
        14645                    14650                 14655

tac gcg tac att    tgt cta gga ttt aac    cag caa tta caa tcc    att  80071
Tyr Ala Tyr Ile    Cys Leu Gly Phe Asn    Gln Gln Leu Gln Ser    Ile
        14660                    14665                 14670

tta gtt tta ccg    ggg gga ttt gcg gca    tgt ttt tgt att acc    gat  80116
Leu Val Leu Pro    Gly Gly Phe Ala Ala    Cys Phe Cys Ile Thr    Asp
        14675                    14680                 14685

acc cta cag gca    gca cta cct gca tcg    tta atc gga cct att    cta  80161
Thr Leu Gln Ala    Ala Leu Pro Ala Ser    Leu Ile Gly Pro Ile    Leu
        14690                    14695                 14700

gac aga ttc tgc    ttc tct att ccc aac    ccc cat aaa taa         80200
Asp Arg Phe Cys    Phe Ser Ile Pro Asn    Pro His Lys
        14705                    14710

attagtgtca ctataaaaac ataacaccag aatctcttca tatgtaattt tacgtcattt  80260

ctccgtttc cacccctct taaaatataa aataaccggg tgggtggcat taaacccaca  80320

agtacccggg cggcaatccg ctagactgtt tttctgctc atg gaa    tta caa cgc  80374
                                            Met Glu    Leu Gln Arg
                                                14715

ata ttt    ccg ctg tac acc gct    acg ggt gca gcg cgc    aaa tta acc  80419
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Ile Phe   Pro Leu Tyr Thr Ala   Thr Gly Ala Ala Arg   Lys Leu Thr
     14720                14725                14730

ccc gag   gca gtt cag aga ctc   tgc gat gca tta acg   ctg gat atg   80464
Pro Glu   Ala Val Gln Arg Leu   Cys Asp Ala Leu Thr   Leu Asp Met
     14735                14740                14745

gga tta   tgg aag tcc atc ctg   acc gat ccc cgg gtg   aaa ata atg   80509
Gly Leu   Trp Lys Ser Ile Leu   Thr Asp Pro Arg Val   Lys Ile Met
     14750                14755                14760

cga tca   act gct ttt ata act   tta agg atc gct ccg   ttt atc ccc   80554
Arg Ser   Thr Ala Phe Ile Thr   Leu Arg Ile Ala Pro   Phe Ile Pro
     14765                14770                14775

ctt caa   acg gat act act aat   att gcc gtt gtt gta   gcc aca att   80599
Leu Gln   Thr Asp Thr Thr Asn   Ile Ala Val Val Val   Ala Thr Ile
     14780                14785                14790

tac atc   acg cgc cca cgt cag   atg aac tta cct ccg   aag act ttt   80644
Tyr Ile   Thr Arg Pro Arg Gln   Met Asn Leu Pro Pro   Lys Thr Phe
     14795                14800                14805

cat gta   att gta aat ttt aat   tac gag gtc tcg tac   gca atg acg   80689
His Val   Ile Val Asn Phe Asn   Tyr Glu Val Ser Tyr   Ala Met Thr
     14810                14815                14820

gcg act   tta aga att tat ccg   gtt gaa aac ata gac   cat gtt ttt   80734
Ala Thr   Leu Arg Ile Tyr Pro   Val Glu Asn Ile Asp   His Val Phe
     14825                14830                14835

gga gca   acg ttt aag aac ccg   atc gcg tac ccc ctt   cca aca tct   80779
Gly Ala   Thr Phe Lys Asn Pro   Ile Ala Tyr Pro Leu   Pro Thr Ser
     14840                14845                14850

att ccg   gat cct cga gca gat   ccc acc ccc gca gat   ctt aca cca   80824
Ile Pro   Asp Pro Arg Ala Asp   Pro Thr Pro Ala Asp   Leu Thr Pro
     14855                14860                14865

acg cca   aac tta agc aac tac   tta caa ccc ccg cgg   ctt ccg aaa   80869
Thr Pro   Asn Leu Ser Asn Tyr   Leu Gln Pro Pro Arg   Leu Pro Lys
     14870                14875                14880

aat cca   tac gca tgt aaa gtt   att tct ccg gga gtg   tgg tgg tca   80914
Asn Pro   Tyr Ala Cys Lys Val   Ile Ser Pro Gly Val   Trp Trp Ser
     14885                14890                14895

gac gaa   cga agg cgt tta tat   gta ctg gct atg gaa   cct aat tta   80959
Asp Glu   Arg Arg Arg Leu Tyr   Val Leu Ala Met Glu   Pro Asn Leu
     14900                14905                14910

ata ggg   cta tgt ccc gcc gga   tgg cat gct cgg ata   ctt ggc tct   81004
Ile Gly   Leu Cys Pro Ala Gly   Trp His Ala Arg Ile   Leu Gly Ser
     14915                14920                14925

gta tta   aat cga ctc ctc agc   cat gcg gac gga tgt   gat gaa tgt   81049
Val Leu   Asn Arg Leu Leu Ser   His Ala Asp Gly Cys   Asp Glu Cys
     14930                14935                14940

aat cat   aga gtt cac gtg ggg   gca ctg tat gcg tta   ccc cat gtc   81094
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      Asn His    Arg Val His Val Gly    Ala Leu Tyr Ala Leu    Pro His Val
         14945                    14950                14955

      aca aat    cat gcg gaa ggt tgt    gtg tgt tgg gct ccg    tgt atg tgg    81139
      Thr Asn    His Ala Glu Gly Cys    Val Cys Trp Ala Pro    Cys Met Trp
         14960                    14965                14970

      aga aag    gcc ggt cag cgg gaa    tta aaa gtg gag gta    gac att ggc    81184
      Arg Lys    Ala Gly Gln Arg Glu    Leu Lys Val Glu Val    Asp Ile Gly
         14975                    14980                14985

      gcc acg    cag gtt ctt ttt gta    gat gtc acc acc tgc    att cga att    81229
      Ala Thr    Gln Val Leu Phe Val    Asp Val Thr Thr Cys    Ile Arg Ile
         14990                    14995                15000

      acg agt    act aaa aat cct cgc    att acc gca aat ctt    ggc gac gtt    81274
      Thr Ser    Thr Lys Asn Pro Arg    Ile Thr Ala Asn Leu    Gly Asp Val
         15005                    15010                15015

      ata gcg    gga acc aac gcc agt    ggt ctc tct gta cca    gta aat tca    81319
      Ile Ala    Gly Thr Asn Ala Ser    Gly Leu Ser Val Pro    Val Asn Ser
         15020                    15025                15030

      tct ggg    tgg cag ctt tat atg    ttt gga gaa aca tta    agc cgg gct    81364
      Ser Gly    Trp Gln Leu Tyr Met    Phe Gly Glu Thr Leu    Ser Arg Ala
         15035                    15040                15045

      att att    aac ggc tgt ggt ctg    ctt cag cga att tgc    ttc ccc gag    81409
      Ile Ile    Asn Gly Cys Gly Leu    Leu Gln Arg Ile Cys    Phe Pro Glu
         15050                    15055                15060

      aca caa    aga tta tcg ggt gaa    ccg gaa cct aca acc    acc tag         81451
      Thr Gln    Arg Leu Ser Gly Glu    Pro Glu Pro Thr Thr    Thr
         15065                    15070                15075

      tatacctta  ctcaaccgcc  gttgtggaaa  ggtatatgtc  aacatttaca  gtaatatatt   81511

      aaaggttaaa  tttataaaac  actcacgttt  gtgttgtgac  ttgacgcgaa  caccgctgtg   81571

      ctgtaagacc  cgtcggtaaa  tgaaaacgta  atagattcgc  cttttacatg  atccacgtaa   81631

      tttgccccaa  accactgttc  caggcgagac  ttgataccct  caaacacggg  ttccgttgct   81691

      ttcgtatat  gagccgtata  acccacttta  attcctctaa  acgtggccat  tactaaagct   81751

      attaatggta  caagaaacca  tgttttccca  tgtctacgtg  gtaccaaaaa  cacagttgat   81811

      ttttgtttga  agtgttctaa  aacactgtca  gaaacacttg  gcgtgttaaa  cactgtacgc   81871

      agaaagcagt  caactctgtc  ggcatgatcg  cccaatagca  ccgatgaaat  aaaatgcgtg   81931

      gtgtgcatga  ggatcatttt  ttgaaacagt  tccaacgtcc  ccttatatct  gccatagatt   81991

      ggaacgtcaa  cctttgcgcg  tttgccatga  cttccacact  cttcaatact  ctcaaagat   82051

      gtttccacaa  ggtacgaaaa  ccgttgtgta  aagtagaca  actgacagaa  actatccgac   82111

      agagaaaacg  cgcgaaatgt  gttcataaca  ccgctatacg  catttcgatg  aggtgctgct   82171

      tcttccggtg  aatattcata  aaactgtaca  ctactgacag  cctttttaa  ttcagggctt   82231
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acgtttgcat ttaccgaata tcgccatggt ttcaaaacta cattgggggt acagttgtac   82291

cctgttgacg atagaaacgc gccaaacatt gcccgtcgag cagtagccga gaacagtgga   82351

atatattcac aacagttgtg aagcgttcca attccgggaa taacggcctg atgacgtcgg   82411

gttacatcta tagcaaaatt cagaaacggg atttgggttg cgtttcccag agacccttgc   82471

cgcgtggaac acggggtagg ggactccaac gtcccaaagc gttcatccct acgacgcttt   82531

agacgttcaa aatatcttac agattcttca ccaagcgtac gaccaaacat tatcaatgac   82591

atttaacatc aattcacgga atccgcctca tctcttgtaa gcagtaaaac aggaagccgc   82651

gtcatcttac gtactcgtta cgtatatatc ataaacattt tcaggccgc attcattcac   82711

tttggtc atg tca ggc cac   act cca acc tac gct   tct cat agg cgt   82757
         Met Ser Gly His   Thr Pro Thr Tyr Ala   Ser His Arg Arg
             15080   15085

aac   cgt gtc aaa cta gtt   gag gcg cat aac cgc   gcg ggg tta ttt   82802
Asn   Arg Val Lys Leu Val   Glu Ala His Asn Arg   Ala Gly Leu Phe
15090   15095   15100

aaa   gaa cgg acc ctc gat   cta atc cgt ggg ggt   gcg agt gta caa   82847
Lys   Glu Arg Thr Leu Asp   Leu Ile Arg Gly Gly   Ala Ser Val Gln
15105   15110   15115

gat   cca gca ttt gtg tat   gcc ttt act gct gca   aaa gag gcc tgc   82892
Asp   Pro Ala Phe Val Tyr   Ala Phe Thr Ala Ala   Lys Glu Ala Cys
15120   15125   15130

gcc   gat tta aat aac cag   ctc cgc tct gca gct   cgc ata gct tca   82937
Ala   Asp Leu Asn Asn Gln   Leu Arg Ser Ala Ala   Arg Ile Ala Ser
15135   15140   15145

gtt   gaa cag aag att cgt   gat ata caa tcc aag   gtt gag gaa caa   82982
Val   Glu Gln Lys Ile Arg   Asp Ile Gln Ser Lys   Val Glu Glu Gln
15150   15155   15160

aca   agt att caa cag att   tta aat aca aac aga   cgc tat ata gca   83027
Thr   Ser Ile Gln Gln Ile   Leu Asn Thr Asn Arg   Arg Tyr Ile Ala
15165   15170   15175

ccc   gat ttt att cgc ggt   ttg gat aaa aca gaa   gac gat aat acc   83072
Pro   Asp Phe Ile Arg Gly   Leu Asp Lys Thr Glu   Asp Asp Asn Thr
15180   15185   15190

gat   aat ata gac aga ctg   gaa gac gcg gta gga   ccg aac atc gaa   83117
Asp   Asn Ile Asp Arg Leu   Glu Asp Ala Val Gly   Pro Asn Ile Glu
15195   15200   15205

cac   gaa aat cat act tgg   ttt gga gaa gac gac   gaa gcg tta ctt   83162
His   Glu Asn His Thr Trp   Phe Gly Glu Asp Asp   Glu Ala Leu Leu
15210   15215   15220

aca   caa tgg atg ctg acg   aca cac ccc cca acc   tcc aaa tat ctc   83207
Thr   Gln Trp Met Leu Thr   Thr His Pro Pro Thr   Ser Lys Tyr Leu
15225   15230   15235

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caa   ctg cag gac ctt tgc   gtt ccc acc aca ata   ccg acg gac atg   83252
Gln   Leu Gln Asp Leu Cys   Val Pro Thr Thr Ile   Pro Thr Asp Met
15240                       15245                 15250

aac   caa atg caa ccg cag   ccg atc agc aag aac   gag aat cca cca   83297
Asn   Gln Met Gln Pro Gln   Pro Ile Ser Lys Asn   Glu Asn Pro Pro
15255                       15260                 15265

acc   cca cac acg gat gtg   taa atcatccatg ggccaatccg tcaactgcaa   83348
Thr   Pro His Thr Asp Val
15270                       15275

catgcatgga atcaccagaa cgatcacaac agacaagctt atttttatta aagcacggct   83408

taacgagaga tccaatacat caacgcgaaa gggtggacgt ttttccacaa tttaacaaac   83468

ccccatgggt ttttagaatt tccaaattat cccgtttaat tgtacccatc ttcacgctca   83528

atgaacagtt atgtttttct aaattacaga ttcgagatag acccaggttt gcgggacggg   83588

gaacgtatgg gcgtgttcat atatacccat cgtcaaaaat agctgtaaaa accatggaca   83648

gtcgtgtttt taatagagag ttaattaacg cgattttagc gagtgagggt tctatacgag   83708

caggggaaag gctaggtatt tctagcatag tttgcctttt aggtttttcg ttacaaacca   83768

aacagctact gtttccggca tacgacatgg atatggatga atacattgtt cgcctgtcca   83828

gacggttgac aatacctgat cacatagaca gaaaaattgc ccatgtattt ttagatttgg   83888

ctcaagcgtt gacgttttta aatcgaacgt gcggcctgac ccacctagat gtgaaatgtg   83948

gcaatatttt tcttaacgtc gacaactttg cctcgttgga ataaccaca gcagtaatcg   84008

gagactatag cctagtaaca ttaaatacgt attcccttg tactcgagcg atatttgaag   84068

ttggaaatcc atcccacccg gagcacgtac tacgcgtacc ccgggatgca tcgcagatgt   84128

catttcgttt ggtgttgagt catggaacaa accaaccccc tgaaatcttg cttgattata   84188

ttaatggaac gggccttact aaatatactg gaaccttgcc ccaaagagtt ggacttgcga   84248

ttgatcttta tgcattgggc caagcactct tagaagttat cctgctagga cgtcttcccg   84308

gacaactgcc catttcagta catcggaccc cgcattatca ctactacggt cataagttat   84368

caccagattt ggcgcttgat acgctggcat atcgatgtgt cctggcgcca tatatactcc   84428

catctgacat ccccggggac ttaaattata atccctttat acacgccgga gagctgaaca   84488

cccgtatttc ccggaattct ttacgccgga tattccagtg tcacgcagtg cgttacggcg   84548

taacgcactc aaagcttttc gaaggcatac gcattccggc ctcattatac ccagccactg   84608

ttgttacatc gttgttgtgt cacgataatt cagaaatacg ctcggatcac cctttatt   84666

atg gca cga tcg gga   ttg gat agg atc gac   ata agc ccc cag cca   84711
Met Ala Arg Ser Gly   Leu Asp Arg Ile Asp   Ile Ser Pro Gln Pro
            15280                 15285                 15290
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gcc aaa aaa att gcc   cgt gtg gga ggt cta   cag cac cct ttt gta   84756
Ala Lys Lys Ile Ala   Arg Val Gly Gly Leu   Gln His Pro Phe Val
            15295                 15300                 15305

aaa acg gat att aac   acg att aac gtt gaa   cac cat ttt ata gac   84801
Lys Thr Asp Ile Asn   Thr Ile Asn Val Glu   His His Phe Ile Asp
            15310                 15315                 15320

acg cta cag aag aca   tca ccg aac atg gac   tgt cgc ggg atg aca   84846
Thr Leu Gln Lys Thr   Ser Pro Asn Met Asp   Cys Arg Gly Met Thr
            15325                 15330                 15335

gcg ggt att ttt att   cgt tta tcc cac atg   tat aaa att cta aca   84891
Ala Gly Ile Phe Ile   Arg Leu Ser His Met   Tyr Lys Ile Leu Thr
            15340                 15345                 15350

act ctg gag tct cca   aat gat gta acc tac   aca aca ccc ggt tct   84936
Thr Leu Glu Ser Pro   Asn Asp Val Thr Tyr   Thr Thr Pro Gly Ser
            15355                 15360                 15365

acc aac gca ctg ttc   ttt aag acg tcc aca   cag cct cag gag ccg   84981
Thr Asn Ala Leu Phe   Phe Lys Thr Ser Thr   Gln Pro Gln Glu Pro
            15370                 15375                 15380

cgt ccg gaa gag tta   gca tcc aaa tta acc   caa gac gac att aaa   85026
Arg Pro Glu Glu Leu   Ala Ser Lys Leu Thr   Gln Asp Asp Ile Lys
            15385                 15390                 15395

cgt att cta tta aca   ata gaa tcg gag act   cgt ggt cag ggc gac   85071
Arg Ile Leu Leu Thr   Ile Glu Ser Glu Thr   Arg Gly Gln Gly Asp
            15400                 15405                 15410

aat gcc att tgg aca   cta ctc aga cga aat   tta atc acc gca tca   85116
Asn Ala Ile Trp Thr   Leu Leu Arg Arg Asn   Leu Ile Thr Ala Ser
            15415                 15420                 15425

act ctt aaa tgg agt   gta tct gga ccc gtc   att cca cct cag tgg   85161
Thr Leu Lys Trp Ser   Val Ser Gly Pro Val   Ile Pro Pro Gln Trp
            15430                 15435                 15440

ttt tac cac cat aac   act aca gac aca tac   ggt gat gcg gcg gca   85206
Phe Tyr His His Asn   Thr Thr Asp Thr Tyr   Gly Asp Ala Ala Ala
            15445                 15450                 15455

atg gcg ttt gga aaa   acc aac gaa ccg gcg   gca cga gcg ata gtt   85251
Met Ala Phe Gly Lys   Thr Asn Glu Pro Ala   Ala Arg Ala Ile Val
            15460                 15465                 15470

gaa gca ttg ttt ata   gat ccg gct gat atc   cgt act cct gat cat   85296
Glu Ala Leu Phe Ile   Asp Pro Ala Asp Ile   Arg Thr Pro Asp His
            15475                 15480                 15485

tta acg cca gaa gct   aca act aag ttt ttt   aat ttt gac atg ctc   85341
Leu Thr Pro Glu Ala   Thr Thr Lys Phe Phe   Asn Phe Asp Met Leu
            15490                 15495                 15500

aat acc aaa tct cca   agt ctc ctt gtg ggt   aca cca aga atc gga   85386
Asn Thr Lys Ser Pro   Ser Leu Leu Val Gly   Thr Pro Arg Ile Gly
            15505                 15510                 15515
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acg tat gaa tgt gga    ctt tta atc gac gtt    cga acg gga ctt ata    85431
Thr Tyr Glu Cys Gly    Leu Leu Ile Asp Val    Arg Thr Gly Leu Ile
                15520                   15525                   15530

ggc gcg tcg ttg gac    gtt ctt gta tgt gac    agg gac cct tta act    85476
Gly Ala Ser Leu Asp    Val Leu Val Cys Asp    Arg Asp Pro Leu Thr
                15535                   15540                   15545

ggc acc cta aat ccc    cac cct gca gaa acc    gac att tca ttt ttt    85521
Gly Thr Leu Asn Pro    His Pro Ala Glu Thr    Asp Ile Ser Phe Phe
                15550                   15555                   15560

gaa att aaa tgt cgt    gct aaa tac ctc ttt    gat cca gat gac aaa    85566
Glu Ile Lys Cys Arg    Ala Lys Tyr Leu Phe    Asp Pro Asp Asp Lys
                15565                   15570                   15575

aat aac ccg ctc ggt    cgg acg tac acc acg    tta ata aat aga cct    85611
Asn Asn Pro Leu Gly    Arg Thr Tyr Thr Thr    Leu Ile Asn Arg Pro
                15580                   15585                   15590

aca atg gca aat cta    cgg gac ttt tta tat    act ata aaa aac cca    85656
Thr Met Ala Asn Leu    Arg Asp Phe Leu Tyr    Thr Ile Lys Asn Pro
                15595                   15600                   15605

tgt gta agc ttc ttt    gga ccc tca gca aac    cca agt aca cgc gag    85701
Cys Val Ser Phe Phe    Gly Pro Ser Ala Asn    Pro Ser Thr Arg Glu
                15610                   15615                   15620

gcc tta ata acg gat    cac gtt gaa tgg aaa    cgt tta gga ttt aaa    85746
Ala Leu Ile Thr Asp    His Val Glu Trp Lys    Arg Leu Gly Phe Lys
                15625                   15630                   15635

ggt ggg agg gcc ctt    aca gaa ctc gac gcc    cat cat ttg ggc ctc    85791
Gly Gly Arg Ala Leu    Thr Glu Leu Asp Ala    His His Leu Gly Leu
                15640                   15645                   15650

aat cgg aca atc tca    tcc cga gtg tgg gta    ttt aat gat ccg gac    85836
Asn Arg Thr Ile Ser    Ser Arg Val Trp Val    Phe Asn Asp Pro Asp
                15655                   15660                   15665

ata caa aag ggg aca    att aca acc att gca    tgg gcc act gga gat    85881
Ile Gln Lys Gly Thr    Ile Thr Thr Ile Ala    Trp Ala Thr Gly Asp
                15670                   15675                   15680

acg gct ctt caa att    cct gta ttt gcc aat    ccg cgg cac gct aac    85926
Thr Ala Leu Gln Ile    Pro Val Phe Ala Asn    Pro Arg His Ala Asn
                15685                   15690                   15695

ttt aaa caa att gcc    gta caa acc tat gta    tta tcc ggt tac ttt    85971
Phe Lys Gln Ile Ala    Val Gln Thr Tyr Val    Leu Ser Gly Tyr Phe
                15700                   15705                   15710

cca gcg cta aaa cta    cgg ccc ttc ctt gtc    acc ttt ata gga cgt    86016
Pro Ala Leu Lys Leu    Arg Pro Phe Leu Val    Thr Phe Ile Gly Arg
                15715                   15720                   15725

gtg cgc cga cca cac    gag gtg gga gtc cca    ttg cgc gtc gat aca    86061
Val Arg Arg Pro His    Glu Val Gly Val Pro    Leu Arg Val Asp Thr
                15730                   15735                   15740
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caa gcg gct gcc att    tac gaa tat aac tgg    ccg act atc cca ccc    86106
Gln Ala Ala Ala Ile    Tyr Glu Tyr Asn Trp    Pro Thr Ile Pro Pro
                15745                   15750                   15755

cac tgt gcg gtt ccg    gtt ata gcc gtt cta    acg cct atc gaa gtt    86151
His Cys Ala Val Pro    Val Ile Ala Val Leu    Thr Pro Ile Glu Val
                15760                   15765                   15770

gat gtg cct aga gtg    aca caa ata ctt aaa    gac aca gga aac aac    86196
Asp Val Pro Arg Val    Thr Gln Ile Leu Lys    Asp Thr Gly Asn Asn
                15775                   15780                   15785

gcg att aca tca gca    ttg cgg tca ttg cga    tgg gac aat ctt cat    86241
Ala Ile Thr Ser Ala    Leu Arg Ser Leu Arg    Trp Asp Asn Leu His
                15790                   15795                   15800

cca gcg gtc gag gag    gaa tct gtg gat tgt    gca aac ggt aca acg    86286
Pro Ala Val Glu Glu    Glu Ser Val Asp Cys    Ala Asn Gly Thr Thr
                15805                   15810                   15815

agc ttg tta cgt gca    acg gag aaa ccg ttg    ctt tga actcagagtt    86332
Ser Leu Leu Arg Ala    Thr Glu Lys Pro Leu    Leu
                15820                   15825
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ctttgaagac tttgactttg atgagaatgt aacagaggac gccgataaat ccacacaacg    86392

ccgcccacga gtgatcgatg taacaccaaa acgaaaacct tcgggaaaga gctcccattc    86452

caaatgcgca aaatgttaaa ccctgataaa ccctgataaa cgttctaata aaaacatcaa    86512

atcatggttg gttactgtga atgtttgttt tattgcttgg gggtttacaa gtacaaccca    86572

cgctactccc acccactgtt tgatcgctcg tataacagct catcctcgcg gtccgtttca    86632

tatgttgagt cattttcata gacgtagccg tagccttgtg atgggtaatt tgtgcggcga    86692

gaatttctat gtgcaggttt tacttttcgt atgtatcccc gtacccgctc gggtactctt    86752

cttacggcac cgtagaaccg actgcgtttc tgtcgatgat acacatatgc acgcatcaat    86812

ctgagaagca acatgacaac ggaaaacacg gccaggcaag ccaaggttcc ccgagttgtg    86872

ggaattaacc gtggagattg aaccgatata gggtcatata atcggtccat atacgagtgc    86932

gcggcggttc ccaacgtagc acaggccacg agcgttccca gggacggtcc tattaacacg    86992

tgtatataat gcgccaaaat taattctgat actataagat atacaactga caatgtacta    87052

aatgtagaca tggccacgga caccgatgac cacagtcccg tatgtagatg attcgccacc    87112

acaagttcca gcattaatga tacaaatagg atacatatcg ccatcaacgc agccatcaaa    87172

ttcacgaaca ctgcgcgcgt aggccccgca aggcgatata aaaagacgct ctgctgtcgt    87232

aaatttgcga ccgctttttat gttcgtttcg tccaattttc cgcgtccaca aaaatacgtt    87292

gtaaatatta cacttgtcgc aaaatgtcca agatataatg tagcagccac gccgatttgc    87352

ttgtaagcta ataataacac aacggcgttt aataaccaca atgacaaaag accccaaaaa    87412
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agtgttgtgg gatctacaac taaccatgca acaccggagc tttgccggac acgttgattt    87472

ttcgtttctc ggtgtataat cgcggccgtg atcagtgtat ataccgccat ggccattgcc    87532

gttaaagccg tgtagtaagt aaatgccaca acgctatgtg gttccaaaaa caaaaccggg    87592

gcgctgtatc cacctctatt tccggaccat accccccat ctaggtggc gttaaataac    87652

tcataatcaa ctacggcagc ataaaaacaa gggatcccgg tatattcaga agaggcggca    87712

attaacgtag ccaggagcat taccgcaccc aaagtgaaca tcatcacctg aattatccaa    87772

attcgccaat taagcgtatc catttgatga tctaacgctt ccacctcggg tgtcgtggtg    87832

tcgtacggcg agactttttc agaacgcggc cccttctttt gagttccc atg tct ccc       87889
                                                        Met Ser Pro


aac     acc ggg gag agc aac   gcc gcc gtc tat gcg   tcc agt aca cag    87934
Asn     Thr Gly Glu Ser Asn   Ala Ala Val Tyr Ala   Ser Ser Thr Gln
15830                 15835                 15840

ctc     gcg cgg gcg tta tat   gga ggg gat ctg gtt   tcg tgg att aaa    87979
Leu     Ala Arg Ala Leu Tyr   Gly Gly Asp Leu Val   Ser Trp Ile Lys
15845                 15850                 15855

cac     acc cac ccg gga att   agc ctg gaa ctg caa   ttg gat gtt cca    88024
His     Thr His Pro Gly Ile   Ser Leu Glu Leu Gln   Leu Asp Val Pro
15860                 15865                 15870

gta     aaa cta ata aaa cct   ggt atg tca caa act   cgc ccg gta acc    88069
Val     Lys Leu Ile Lys Pro   Gly Met Ser Gln Thr   Arg Pro Val Thr
15875                 15880                 15885

gtc     gta cgt gcc cct atg   ggc tct ggt aaa aca   aca gcc ttg ctt    88114
Val     Val Arg Ala Pro Met   Gly Ser Gly Lys Thr   Thr Ala Leu Leu
15890                 15895                 15900

gag     tgg ctt caa cac gcg   tta aag gca gat att   agc gta ctg gtt    88159
Glu     Trp Leu Gln His Ala   Leu Lys Ala Asp Ile   Ser Val Leu Val
15905                 15910                 15915

gtc     tca tgt cgc cgt agc   ttt acc cag acg ttg   att caa cgg ttt    88204
Val     Ser Cys Arg Arg Ser   Phe Thr Gln Thr Leu   Ile Gln Arg Phe
15920                 15925                 15930

aac     gat gca ggc ctc tcc   gga ttc gta aca tat   ttg aca tcc gag    88249
Asn     Asp Ala Gly Leu Ser   Gly Phe Val Thr Tyr   Leu Thr Ser Glu
15935                 15940                 15945

aca     tat att atg ggt ttt   aaa cgt ttg att gtg   caa ctt gaa agc    88294
Thr     Tyr Ile Met Gly Phe   Lys Arg Leu Ile Val   Gln Leu Glu Ser
15950                 15955                 15960

cta     cac cgc gta tcc agc   gaa gct atc gac agc   tac gac gta tta    88339
Leu     His Arg Val Ser Ser   Glu Ala Ile Asp Ser   Tyr Asp Val Leu
15965                 15970                 15975

ata     ctg gat gag gta atg   tca gtg att gga caa   tta tac tcc ccc    88384
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Ile     Leu Asp Glu Val Met   Ser Val Ile Gly Gln   Leu Tyr Ser Pro
15980                     15985                 15990

aca     atg aga cgt ctt tcc   gcg gtt gat agc cta   tta tat cgt ctt   88429
Thr     Met Arg Arg Leu Ser   Ala Val Asp Ser Leu   Leu Tyr Arg Leu
15995                     16000                 16005

tta     aat cgc tgt tct caa   att atc gcg atg gat   gct aca gta aac   88474
Leu     Asn Arg Cys Ser Gln   Ile Ile Ala Met Asp   Ala Thr Val Asn
16010                     16015                 16020

tcg     cag ttt att gat tta   atc tcc gga ttg cgt   gga gat gaa aac   88519
Ser     Gln Phe Ile Asp Leu   Ile Ser Gly Leu Arg   Gly Asp Glu Asn
16025                     16030                 16035

ata     cac aca att gtg tgt   aca tac gcg gga gtt   ggg ttc tcc gga   88564
Ile     His Thr Ile Val Cys   Thr Tyr Ala Gly Val   Gly Phe Ser Gly
16040                     16045                 16050

aga     act tgc acg atc ctg   cgt gat atg ggc atc   gac acg ctt gtg   88609
Arg     Thr Cys Thr Ile Leu   Arg Asp Met Gly Ile   Asp Thr Leu Val
16055                     16060                 16065

cga     gtc att aaa cga tct   cct gaa cac gag gat   gta cgt acc ata   88654
Arg     Val Ile Lys Arg Ser   Pro Glu His Glu Asp   Val Arg Thr Ile
16070                     16075                 16080

cac     caa cta cgt gga aca   ttt ttt gac gaa cta   gca cta cga tta   88699
His     Gln Leu Arg Gly Thr   Phe Phe Asp Glu Leu   Ala Leu Arg Leu
16085                     16090                 16095

caa     tgt ggg cat aac atc   tgt ata ttt tca tca   act tta tcg ttt   88744
Gln     Cys Gly His Asn Ile   Cys Ile Phe Ser Ser   Thr Leu Ser Phe
16100                     16105                 16110

tcg     gag cta gtt gct cag   ttt tgt gca ata ttt   aca gac tct att   88789
Ser     Glu Leu Val Ala Gln   Phe Cys Ala Ile Phe   Thr Asp Ser Ile
16115                     16120                 16125

ctt     att tta aac tca act   cgg ccc cta tgt aat   gta aac gaa tgg   88834
Leu     Ile Leu Asn Ser Thr   Arg Pro Leu Cys Asn   Val Asn Glu Trp
16130                     16135                 16140

aaa     cat ttt cgc gtg ttg   gtg tac act acc gtc   gtg acc gtt gga   88879
Lys     His Phe Arg Val Leu   Val Tyr Thr Thr Val   Val Thr Val Gly
16145                     16150                 16155

ttg     agt ttt gac atg gct   cat ttt cat agc atg   ttt gct tac ata   88924
Leu     Ser Phe Asp Met Ala   His Phe His Ser Met   Phe Ala Tyr Ile
16160                     16165                 16170

aag     cca atg tca tat ggg   ccg gat atg gta tcg   gtc tac cag tca   88969
Lys     Pro Met Ser Tyr Gly   Pro Asp Met Val Ser   Val Tyr Gln Ser
16175                     16180                 16185

tta     ggg cgt gta cgt tta   ttg cta ctt aat gaa   gtt ttg atg tac   89014
Leu     Gly Arg Val Arg Leu   Leu Leu Leu Asn Glu   Val Leu Met Tyr
16190                     16195                 16200

gtc     gat ggc tca agg acc   aga tgc gga ccc ctg   ttc tcg cca atg   89059
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Val    Asp Gly Ser Arg Thr   Arg Cys Gly Pro Leu   Phe Ser Pro Met
16205                   16210                 16215

tta    cta aac ttt acc atc   gca aat aaa ttt caa   tgg ttt cct aca   89104
Leu    Leu Asn Phe Thr Ile   Ala Asn Lys Phe Gln   Trp Phe Pro Thr
16220                   16225                 16230

cac    acc caa ata act aac   aaa ctg tgc tgt gca   ttt agg caa cga   89149
His    Thr Gln Ile Thr Asn   Lys Leu Cys Cys Ala   Phe Arg Gln Arg
16235                   16240                 16245

tgt    gca aat gca ttt aca   cgc tcg aac acc cat   ctc ttc tca aga   89194
Cys    Ala Asn Ala Phe Thr   Arg Ser Asn Thr His   Leu Phe Ser Arg
16250                   16255                 16260

ttt    aaa tac aaa cac ctt   ttc gag aga tgc tct   ctt tgg agt tta   89239
Phe    Lys Tyr Lys His Leu   Phe Glu Arg Cys Ser   Leu Trp Ser Leu
16265                   16270                 16275

gcc    gat agc att aat atc   tta caa act ctt ttg   gcc tct aac caa   89284
Ala    Asp Ser Ile Asn Ile   Leu Gln Thr Leu Leu   Ala Ser Asn Gln
16280                   16285                 16290

att    ttg gtt gta ttg gat   ggc atg ggt cca ata   acg gac gtt tcc   89329
Ile    Leu Val Val Leu Asp   Gly Met Gly Pro Ile   Thr Asp Val Ser
16295                   16300                 16305

cca    gtt caa ttt tgt gca   ttt ata cac gat ctc   aga cat agc gct   89374
Pro    Val Gln Phe Cys Ala   Phe Ile His Asp Leu   Arg His Ser Ala
16310                   16315                 16320

aac    gcc gta gct tcc tgt   atg cgt tct ctt aga   cag gac aat gac   89419
Asn    Ala Val Ala Ser Cys   Met Arg Ser Leu Arg   Gln Asp Asn Asp
16325                   16330                 16335

agc    tgc ttg acc gat ttt   ggc cct tcc gga ttt   atg gcc gat aac   89464
Ser    Cys Leu Thr Asp Phe   Gly Pro Ser Gly Phe   Met Ala Asp Asn
16340                   16345                 16350

att    acc gcg ttt atg gaa   aag tat ctt atg gag   tca att aat acc   89509
Ile    Thr Ala Phe Met Glu   Lys Tyr Leu Met Glu   Ser Ile Asn Thr
16355                   16360                 16365

gaa    gaa caa att aaa gta   ttt aaa gcc ctt gca   tgt cca ata gaa   89554
Glu    Glu Gln Ile Lys Val   Phe Lys Ala Leu Ala   Cys Pro Ile Glu
16370                   16375                 16380

cag    cct aga cta gtc aat   acg gca ata ttg ggg   gcg tgt ata cga   89599
Gln    Pro Arg Leu Val Asn   Thr Ala Ile Leu Gly   Ala Cys Ile Arg
16385                   16390                 16395

ata    cct gaa gcg ttg gaa   gca ttt gac gta ttt   caa aaa ata tac   89644
Ile    Pro Glu Ala Leu Glu   Ala Phe Asp Val Phe   Gln Lys Ile Tyr
16400                   16405                 16410

acg    cac tac gct tcc ggt   tgg ttt ccc gtc ctg   gac aaa acc ggg   89689
Thr    His Tyr Ala Ser Gly   Trp Phe Pro Val Leu   Asp Lys Thr Gly
16415                   16420                 16425

gaa    ttt agc atc gcg act   ata act acc gcc cca   aat tta acc aca   89734
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Glu     Phe Ser Ile Ala Thr    Ile Thr Thr Ala Pro    Asn Leu Thr Thr
16430                    16435                  16440

cat     tgg gag ctg ttt cgc    cgt tgt gcc tat att    gca aaa aca ctc    89779
His     Trp Glu Leu Phe Arg    Arg Cys Ala Tyr Ile    Ala Lys Thr Leu
16445                    16450                  16455

aag     tgg aat ccg tcc acc    gaa ggc tgt gta aca    caa gtt ttg gat    89824
Lys     Trp Asn Pro Ser Thr    Glu Gly Cys Val Thr    Gln Val Leu Asp
16460                    16465                  16470

acg     gac att aat aca ctt    ttc aat caa cac ggg    gat tcg ctg gct    89869
Thr     Asp Ile Asn Thr Leu    Phe Asn Gln His Gly    Asp Ser Leu Ala
16475                    16480                  16485

caa     cta ata ttt gag gtt    atg cgc tgt aac gtt    act gac gct aag    89914
Gln     Leu Ile Phe Glu Val    Met Arg Cys Asn Val    Thr Asp Ala Lys
16490                    16495                  16500

att     ata tta aac cgc ccg    gtt tgg cga aca acc    gga ttc tta gat    89959
Ile     Ile Leu Asn Arg Pro    Val Trp Arg Thr Thr    Gly Phe Leu Asp
16505                    16510                  16515

gga     tgc cat aat caa tgc    ttc cgt cca atc cct    aca aaa cac gaa    90004
Gly     Cys His Asn Gln Cys    Phe Arg Pro Ile Pro    Thr Lys His Glu
16520                    16525                  16530

tat     aac att gct cta ttt    cgt tta att tgg gaa    caa tta ttt ggc    90049
Tyr     Asn Ile Ala Leu Phe    Arg Leu Ile Trp Glu    Gln Leu Phe Gly
16535                    16540                  16545

gcc     cgc gta act aaa agt    acc cag acc ttt ccg    gga agt act cgt    90094
Ala     Arg Val Thr Lys Ser    Thr Gln Thr Phe Pro    Gly Ser Thr Arg
16550                    16555                  16560

gtg     aaa aac cta aaa aaa    aaa gat cta gaa act    tta ctt gat tca    90139
Val     Lys Asn Leu Lys Lys    Lys Asp Leu Glu Thr    Leu Leu Asp Ser
16565                    16570                  16575

att     aac gtg gat cgt tct    gca tgt cgt acc tac    cgc cag ttg tat    90184
Ile     Asn Val Asp Arg Ser    Ala Cys Arg Thr Tyr    Arg Gln Leu Tyr
16580                    16585                  16590

aac     ctg ctt atg agc cag    cgc cat tcg ttc tct    caa cag cgt tac    90229
Asn     Leu Leu Met Ser Gln    Arg His Ser Phe Ser    Gln Gln Arg Tyr
16595                    16600                  16605

aaa     att act gcc ccc gct    tgg gca cgc cac gtg    tat ttt caa gca    90274
Lys     Ile Thr Ala Pro Ala    Trp Ala Arg His Val    Tyr Phe Gln Ala
16610                    16615                  16620

cat     caa atg cac ttg gcc    ccg cat gcc gaa gcc    atg cta caa tta    90319
His     Gln Met His Leu Ala    Pro His Ala Glu Ala    Met Leu Gln Leu
16625                    16630                  16635

gcg     cta tcg gaa ctg tcc    ccg gga tcg tgg ccg    cgg ata aac ggg    90364
Ala     Leu Ser Glu Leu Ser    Pro Gly Ser Trp Pro    Arg Ile Asn Gly
16640                    16645                  16650

gcg     gta aat ttt gaa agt    tta taa cccgttaata ccatatatgg              90408
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      Ala     Val Asn Phe Glu Ser     Leu
      16655                   16660


      acatccatag gggggggttac ataaatacta agcctctgta caacacaaag ggcctctaac   90468


      aatgcactga accacaacca agct atg gac gca acg   cag att acc ttg          90516
                            Met Asp Ala Thr   Gln Ile Thr Leu
                                        16665


      gtt     aga gaa agc gga cac     att tgt gcc gca agc     ata tac aca tcc   90561
      Val     Arg Glu Ser Gly His     Ile Cys Ala Ala Ser     Ile Tyr Thr Ser
      16670                 16675                 16680


      tgg     aca cag tcc gga caa     tta aca cag aac ggt     ctt tcc gtg tta   90606
      Trp     Thr Gln Ser Gly Gln     Leu Thr Gln Asn Gly     Leu Ser Val Leu
      16685                 16690                 16695


      tac     tac tta tta tgc aaa     aac tca tgt ggg aaa     tac gtc cct aag   90651
      Tyr     Tyr Leu Leu Cys Lys     Asn Ser Cys Gly Lys     Tyr Val Pro Lys
      16700                 16705                 16710


      ttt     gcc gaa att acc gta     caa caa gag gat tta     tgt cgc tac tcc   90696
      Phe     Ala Glu Ile Thr Val     Gln Gln Glu Asp Leu     Cys Arg Tyr Ser
      16715                 16720                 16725


      agg     cat ggg ggg agt gtt     tct gcg gca acg ttt     gcg tct atc tgc   90741
      Arg     His Gly Gly Ser Val     Ser Ala Ala Thr Phe     Ala Ser Ile Cys
      16730                 16735                 16740


      agg     gcg gcg tcc tcg gct     gcg tta gac gcc tgg     ccc ctt gaa cca   90786
      Arg     Ala Ala Ser Ser Ala     Ala Leu Asp Ala Trp     Pro Leu Glu Pro
      16745                 16750                 16755


      ctg     ggt aac gca gac acc     tgg cgt tgt ctc cat     ggc act gcc ctg   90831
      Leu     Gly Asn Ala Asp Thr     Trp Arg Cys Leu His     Gly Thr Ala Leu
      16760                 16765                 16770


      gcc     act tta cgg cgc gta     tta ggg ttt aaa tcg     ttt tat tcg cca   90876
      Ala     Thr Leu Arg Arg Val     Leu Gly Phe Lys Ser     Phe Tyr Ser Pro
      16775                 16780                 16785


      gta     aca ttc gag act gat     acg aat aca ggt ctt     ctg tta aaa aca   90921
      Val     Thr Phe Glu Thr Asp     Thr Asn Thr Gly Leu     Leu Leu Lys Thr
      16790                 16795                 16800


      atc     ccc gat gaa cac gcg     ttg aat aat gac aac     acg cca tct acc   90966
      Ile     Pro Asp Glu His Ala     Leu Asn Asn Asp Asn     Thr Pro Ser Thr
      16805                 16810                 16815


      gga     gta ttg agg gct aat     ttt ccc gtg gcc att     gat gtt tca gca   91011
      Gly     Val Leu Arg Ala Asn     Phe Pro Val Ala Ile     Asp Val Ser Ala
      16820                 16825                 16830


      gtc     agc gca tgt aac gcc     cac acg caa ggt acg     tcg cta gcc tac   91056
      Val     Ser Ala Cys Asn Ala     His Thr Gln Gly Thr     Ser Leu Ala Tyr
      16835                 16840                 16845


      gcc     cgc ctg acc gca ctt     aaa tct aac ggt gac     acc cag caa caa   91101
      Ala     Arg Leu Thr Ala Leu     Lys Ser Asn Gly Asp     Thr Gln Gln Gln
      16850                 16855                 16860
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aca   cct tta gac gtg gag   gta att aca cca aag   gcc tac ata cgt   91146
Thr   Pro Leu Asp Val Glu   Val Ile Thr Pro Lys   Ala Tyr Ile Arg
16865                       16870               16875

cgg   aaa tat aag tct acg   ttt tcc ccc cct ata   gag cgg gaa ggc   91191
Arg   Lys Tyr Lys Ser Thr   Phe Ser Pro Pro Ile   Glu Arg Glu Gly
16880                       16885               16890

caa   acc tcc gat ttg ttt   aac ctt gaa gaa cgc   cgc ttg gtt ctt   91236
Gln   Thr Ser Asp Leu Phe   Asn Leu Glu Glu Arg   Arg Leu Val Leu
16895                       16900               16905

agt   ggc aat cgc gca att   gtg gta agg gta ctc   tta ccg tgt tat   91281
Ser   Gly Asn Arg Ala Ile   Val Val Arg Val Leu   Leu Pro Cys Tyr
16910                       16915               16920

ttt   gac tgt tta aca acg   gat tcc acc gtt aca   tct tcc ctt tca   91326
Phe   Asp Cys Leu Thr Thr   Asp Ser Thr Val Thr   Ser Ser Leu Ser
16925                       16930               16935

ata   tta gca aca tat aga   ctg tgg tac gcg gcg   gcg ttt gga aaa   91371
Ile   Leu Ala Thr Tyr Arg   Leu Trp Tyr Ala Ala   Ala Phe Gly Lys
16940                       16945               16950

ccc   ggg gtt gtc cgt cca   atc ttt gcg tat tta   ggc ccg gaa ctc   91416
Pro   Gly Val Val Arg Pro   Ile Phe Ala Tyr Leu   Gly Pro Glu Leu
16955                       16960               16965

aat   ccg aag ggt gaa gac   aga gac tac ttt tgt   act gtc gga ttt   91461
Asn   Pro Lys Gly Glu Asp   Arg Asp Tyr Phe Cys   Thr Val Gly Phe
16970                       16975               16980

ccc   gga tgg acc act ctt   cgg aca caa act cca   gcc gtc gaa tct   91506
Pro   Gly Trp Thr Thr Leu   Arg Thr Gln Thr Pro   Ala Val Glu Ser
16985                       16990               16995

att   cgc acg gct acg gag   atg tac atg gaa acg   gat ggg ttg tgg   91551
Ile   Arg Thr Ala Thr Glu   Met Tyr Met Glu Thr   Asp Gly Leu Trp
17000                       17005               17010

cca   gta acc ggt att cag   gcc ttt cat tat cta   gcc ccc tgg gga   91596
Pro   Val Thr Gly Ile Gln   Ala Phe His Tyr Leu   Ala Pro Trp Gly
17015                       17020               17025

cag   cat ccc ccc tta cct   ccg cgg gtg cag gat   ctt att ggg caa   91641
Gln   His Pro Pro Leu Pro   Pro Arg Val Gln Asp   Leu Ile Gly Gln
17030                       17035               17040

atc   cct caa gat act gga   cat gca gat gca act   gtc aat tgg gac   91686
Ile   Pro Gln Asp Thr Gly   His Ala Asp Ala Thr   Val Asn Trp Asp
17045                       17050               17055

gcg   ggc cgg ata tct acc   gtc ttc aaa cag cct   gta caa cta caa   91731
Ala   Gly Arg Ile Ser Thr   Val Phe Lys Gln Pro   Val Gln Leu Gln
17060                       17065               17070

gat   cgt tgg atg gca aag   ttt gat ttc agc gcc   ttt ttt ccc acg   91776
Asp   Arg Trp Met Ala Lys   Phe Asp Phe Ser Ala   Phe Phe Pro Thr
17075                       17080               17085
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ata  tac tgc gct atg ttc  ccc atg cat ttt aga  tta ggc aaa atc  91821
Ile  Tyr Cys Ala Met Phe  Pro Met His Phe Arg  Leu Gly Lys Ile
17090                17095                17100

gtc  ctg gct aga atg cgt  cga gga atg ggg tgc  cta aaa ccc gcg  91866
Val  Leu Ala Arg Met Arg  Arg Gly Met Gly Cys  Leu Lys Pro Ala
17105                17110                17115

ttg  gtg tct ttt ttt ggg  ggg tta cgg cac ata  ctc ccg agt ata  91911
Leu  Val Ser Phe Phe Gly  Gly Leu Arg His Ile  Leu Pro Ser Ile
17120                17125                17130

tac  aaa gct att att ttt  ata gcc aat gaa att  agc ctt tgc gtc  91956
Tyr  Lys Ala Ile Ile Phe  Ile Ala Asn Glu Ile  Ser Leu Cys Val
17135                17140                17145

gaa  caa acg gcc ttg gaa  cag ggc ttt gct ata  tgt act tat ata  92001
Glu  Gln Thr Ala Leu Glu  Gln Gly Phe Ala Ile  Cys Thr Tyr Ile
17150                17155                17160

aaa  gat gga ttt tgg gga  atc ttc acc gat tta  cat acg cgc aat  92046
Lys  Asp Gly Phe Trp Gly  Ile Phe Thr Asp Leu  His Thr Arg Asn
17165                17170                17175

gta  tgt tca gat cag gca  cgt tgt tcg gcc tta  aat tta gcg gcc  92091
Val  Cys Ser Asp Gln Ala  Arg Cys Ser Ala Leu  Asn Leu Ala Ala
17180                17185                17190

acc  tgc gaa aga gca gtc  acg ggc tta tta cga  att caa cta ggt  92136
Thr  Cys Glu Arg Ala Val  Thr Gly Leu Leu Arg  Ile Gln Leu Gly
17195                17200                17205

ctt  aac ttt aca ccc gcc  atg gaa ccg gta ctc  cgg gtc gag ggt  92181
Leu  Asn Phe Thr Pro Ala  Met Glu Pro Val Leu  Arg Val Glu Gly
17210                17215                17220

gtg  tac act cac gca ttt  acc tgg tgt acc acg  gga agc tgg ctg  92226
Val  Tyr Thr His Ala Phe  Thr Trp Cys Thr Thr  Gly Ser Trp Leu
17225                17230                17235

tgg  aat tta caa aca aac  acg cct ccg gat tta  gtt ggc gtg cca  92271
Trp  Asn Leu Gln Thr Asn  Thr Pro Pro Asp Leu  Val Gly Val Pro
17240                17245                17250

tgg  cga agt cag gcg gcg  cga gat tta aag gag  cgt ctt tca gga  92316
Trp  Arg Ser Gln Ala Ala  Arg Asp Leu Lys Glu  Arg Leu Ser Gly
17255                17260                17265

ctc  cta tgt acc gca aca  aaa att cga gaa cgg  ata cag gaa aat  92361
Leu  Leu Cys Thr Ala Thr  Lys Ile Arg Glu Arg  Ile Gln Glu Asn
17270                17275                17280

tgc  ata tgg gac cat gtc  cta tac gac ata tgg  gcc gga caa gtt  92406
Cys  Ile Trp Asp His Val  Leu Tyr Asp Ile Trp  Ala Gly Gln Val
17285                17290                17295

gtg  gag gct gcc aga aaa  aca tac gtc gat ttt  ttt gaa cat gtt  92451
Val  Glu Ala Ala Arg Lys  Thr Tyr Val Asp Phe  Phe Glu His Val
17300                17305                17310
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ttt    gat cgc cgt tat act    ccg gta tac tgg agt    ctt cag gag caa    92496
Phe    Asp Arg Arg Tyr Thr    Pro Val Tyr Trp Ser    Leu Gln Glu Gln
17315                         17320                  17325

aat    tcg gaa aca aaa gca    ata ccg gca tct tat    ctg aca tac gga    92541
Asn    Ser Glu Thr Lys Ala    Ile Pro Ala Ser Tyr    Leu Thr Tyr Gly
17330                         17335                  17340

cac    atg caa gat aag gat    tat aaa cca aga cag    ata att atg gtt    92586
His    Met Gln Asp Lys Asp    Tyr Lys Pro Arg Gln    Ile Ile Met Val
17345                         17350                  17355

cgt    aat ccc aac cca cat    gga cct cct act gtt    gtt tac tgg gaa    92631
Arg    Asn Pro Asn Pro His    Gly Pro Pro Thr Val    Val Tyr Trp Glu
17360                         17365                  17370

ttg    cta cca tcg tgt gcc    tgt att ccc ccc ata    gac tgc gct gct    92676
Leu    Leu Pro Ser Cys Ala    Cys Ile Pro Pro Ile    Asp Cys Ala Ala
17375                         17380                  17385

cat    ctc aag ccc ctt ata    cac acg ttt gtc act    att att aac cat    92721
His    Leu Lys Pro Leu Ile    His Thr Phe Val Thr    Ile Ile Asn His
17390                         17395                  17400

ctt    cta gat gct cat aat    gat ttt tca agt cca    tca ttg aaa ttt    92766
Leu    Leu Asp Ala His Asn    Asp Phe Ser Ser Pro    Ser Leu Lys Phe
17405                         17410                  17415

act    gac gat ccc ctt gct    tca tat aac ttc ttg    ttt tta tga        92808
Thr    Asp Asp Pro Leu Ala    Ser Tyr Asn Phe Leu    Phe Leu
17420                         17425                  17430

caaaaaaaca cgccgcaaca acccatcctt aaaataaaag gtttatttac tttacaaccc    92868

gtggtgaatt tttatacgtt tcaaataact gaacattttt cggtgttacc atggtgcgat    92928

ttaaccacca aaaatatacg ctcttctgat attccgaatc tcgtaaaggt ccatttaaca    92988

atcccggggg tacttgcacc acaccatctg gacagggggg ggttccgtgg ggcaggtcaa    93048

aacgctgacc caccccacat gaatatatag cctttataat attgggggcc gttccaggct    93108

gagggttcag taacttaaca aacatataat gcggcaatac gcgggttttt gtaaaggggt    93168

tgttatcaac gacatacatt agagtgttta acaaccataa aactccctca tataaaaacc    93228

gacgcatttt ttccaaaggt cctatttgac actcaacgcg tctaagatat acagacaatt    93288

gtacaaacag cgatggagat gccccggagg gcccaatgcc ttccagatac attaaaataa    93348

cacataaggt aaaatctagg acattatccg ggcggaatag agtcatccga tagattaaca    93408

ggcgcggagg caccccacc gtatacaccc tatcttcaac cgcagttaat acggaaaaaa    93468

taaatccgcg gaacgctggt tgagtaacac actccatgta gtaacgatca caggacacct    93528

cacttgaatc accattcaac actactaaaa cggtctcttg gtgttccggt tttacgcgca    93588

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cgagttgcat ccaacgcgtt catcaaaacg gttgcctgaa cttggcgaat tacagtttcc   95688

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aaccacg atg aaa aga   tca att tct gta gac   agt tct tca ccc aaa   96034
        Met Lys Arg   Ser Ile Ser Val Asp   Ser Ser Ser Pro Lys
        17435   17440   17445

aac gtt ttt aat cca   gag acg ccc aat gga   ttt gat gac agt gta   96079
Asn Val Phe Asn Pro   Glu Thr Pro Asn Gly   Phe Asp Asp Ser Val
            17450   17455   17460

tat tta aac ttc acc   tct atg cat agc att   caa cct atc ctc tca   96124
Tyr Leu Asn Phe Thr   Ser Met His Ser Ile   Gln Pro Ile Leu Ser
            17465   17470   17475

cgg att cga gaa ctt   gcc gca att acg att   cca aaa gaa cgt gtt   96169
Arg Ile Arg Glu Leu   Ala Ala Ile Thr Ile   Pro Lys Glu Arg Val
            17480   17485   17490

ccg cgg ttg tgt tgg   ttt aaa cag tta ctc   gaa ctg caa gcg cct   96214
Pro Arg Leu Cys Trp   Phe Lys Gln Leu Leu   Glu Leu Gln Ala Pro
            17495   17500   17505

cct gaa atg cag agg   aat gag ctc ccc ttc   tcc gtt tat tta att   96259
Pro Glu Met Gln Arg   Asn Glu Leu Pro Phe   Ser Val Tyr Leu Ile
            17510   17515   17520

agc gga aat gcc ggc   tcc gga aaa agc acg   tgt atc caa acg ctt   96304
Ser Gly Asn Ala Gly   Ser Gly Lys Ser Thr   Cys Ile Gln Thr Leu
            17525   17530   17535

aac gaa gct atc gat   tgc att att acc gga   tcc acc agg gtt gct   96349
Asn Glu Ala Ile Asp   Cys Ile Ile Thr Gly   Ser Thr Arg Val Ala
            17540   17545   17550

gcc caa aat gtt cat   gct aag tta tca acg   gct tat gcg agt cgt   96394
Ala Gln Asn Val His   Ala Lys Leu Ser Thr   Ala Tyr Ala Ser Arg
            17555   17560   17565

ccg ata aac aca atc   ttt cat gaa ttt ggt   ttt cgc gga aat cac   96439
Pro Ile Asn Thr Ile   Phe His Glu Phe Gly   Phe Arg Gly Asn His
            17570   17575   17580

att cag gct cag ctg   ggc cgt tac gca tat   aac tgg act acg acc   96484

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Ile Gln Ala Gln Leu     Gly Arg Tyr Ala Tyr     Asn Trp Thr Thr Thr
          17585                       17590                    17595

ccc cct tct att gag     gac ctg caa aaa aga     gat att gta tac tac     96529
Pro Pro Ser Ile Glu     Asp Leu Gln Lys Arg     Asp Ile Val Tyr Tyr
          17600                       17605                    17610

tgg gaa gtt tta att     gat ata aca aaa cga     gtg ttt caa atg ggg     96574
Trp Glu Val Leu Ile     Asp Ile Thr Lys Arg     Val Phe Gln Met Gly
          17615                       17620                    17625

gac gac ggt cgc gga     gga aca tcg aca ttt     aaa acc ctg tgg gca     96619
Asp Asp Gly Arg Gly     Gly Thr Ser Thr Phe     Lys Thr Leu Trp Ala
          17630                       17635                    17640

att gaa cgt ttg ctt     aat aaa cct aca ggc     tca atg tcc gga acc     96664
Ile Glu Arg Leu Leu     Asn Lys Pro Thr Gly     Ser Met Ser Gly Thr
          17645                       17650                    17655

gcg ttt atc gca tgc     ggt tcc ctt ccg gct     ttt acc cgg agc aac     96709
Ala Phe Ile Ala Cys     Gly Ser Leu Pro Ala     Phe Thr Arg Ser Asn
          17660                       17665                    17670

gtt att gtt att gat     gaa gca gga ttg cta     ggg cgt cat att ctc     96754
Val Ile Val Ile Asp     Glu Ala Gly Leu Leu     Gly Arg His Ile Leu
          17675                       17680                    17685

acg gcc gtt gtt tac     tgt tgg tgg ctt ttg     aat gct ata tat caa     96799
Thr Ala Val Val Tyr     Cys Trp Trp Leu Leu     Asn Ala Ile Tyr Gln
          17690                       17695                    17700

agc cct cag tac ata     aac ggt cga aaa ccg     gtc ata gta tgc gtc     96844
Ser Pro Gln Tyr Ile     Asn Gly Arg Lys Pro     Val Ile Val Cys Val
          17705                       17710                    17715

ggt tcg ccc acc caa     act gac tcg tta gaa     tct cat ttt caa cat     96889
Gly Ser Pro Thr Gln     Thr Asp Ser Leu Glu     Ser His Phe Gln His
          17720                       17725                    17730

gac atg cag cgt tca     cac gta act cct agt     gaa aat ata ctc acg     96934
Asp Met Gln Arg Ser     His Val Thr Pro Ser     Glu Asn Ile Leu Thr
          17735                       17740                    17745

tat ata atc tgc aat     caa act ctg cgt caa     tat act aac atc tca     96979
Tyr Ile Ile Cys Asn     Gln Thr Leu Arg Gln     Tyr Thr Asn Ile Ser
          17750                       17755                    17760

cat aac tgg gca atc     ttt att aat aac aaa     cga tgt caa gag gac     97024
His Asn Trp Ala Ile     Phe Ile Asn Asn Lys     Arg Cys Gln Glu Asp
          17765                       17770                    17775

gat ttt gga aat ctt     tta aaa acg ctt gag     tac ggg cta cct att     97069
Asp Phe Gly Asn Leu     Leu Lys Thr Leu Glu     Tyr Gly Leu Pro Ile
          17780                       17785                    17790

acc gaa gca cat gcg     cgt ctg gtc gat aca     ttt gtt gta cct gca     97114
Thr Glu Ala His Ala     Arg Leu Val Asp Thr     Phe Val Val Pro Ala
          17795                       17800                    17805

tcc tat att aac aat     cct gct aat ctt ccc     gga tgg acg cgt ctg     97159
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Ser Tyr Ile Asn Asn   Pro Ala Asn Leu Pro   Gly Trp Thr Arg Leu
         17810                   17815                   17820

tat tcg tcg cat aag   gag gtg agc gcg tat   atg agt aag tta cac   97204
Tyr Ser Ser His Lys   Glu Val Ser Ala Tyr   Met Ser Lys Leu His
         17825                   17830                   17835

gcg cat tta aaa cta   tcg aaa aat gac cat   ttt tct gtg ttt gcc   97249
Ala His Leu Lys Leu   Ser Lys Asn Asp His   Phe Ser Val Phe Ala
         17840                   17845                   17850

tta ccg act tat aca   ttc atc cgg cta acg   gca ttt gat gaa tac   97294
Leu Pro Thr Tyr Thr   Phe Ile Arg Leu Thr   Ala Phe Asp Glu Tyr
         17855                   17860                   17865

cgc aaa tta acg gga   caa ccc gga ctt tct   gtt gaa cat tgg ata   97339
Arg Lys Leu Thr Gly   Gln Pro Gly Leu Ser   Val Glu His Trp Ile
         17870                   17875                   17880

cgg gca aac tcc ggt   cgt ttg cac aat tat   tcc caa agc cga gat   97384
Arg Ala Asn Ser Gly   Arg Leu His Asn Tyr   Ser Gln Ser Arg Asp
         17885                   17890                   17895

cat gac atg gga aca   gtt aaa tac gaa aca   cat tca aat cgc gac   97429
His Asp Met Gly Thr   Val Lys Tyr Glu Thr   His Ser Asn Arg Asp
         17900                   17905                   17910

tta att gta gcc cgt   aca gac atc act tac   gtg cta aat agt ctc   97474
Leu Ile Val Ala Arg   Thr Asp Ile Thr Tyr   Val Leu Asn Ser Leu
         17915                   17920                   17925

gta gtt gta acc aca   aga cta cgt aag tta   gtt att gga ttc agt   97519
Val Val Val Thr Thr   Arg Leu Arg Lys Leu   Val Ile Gly Phe Ser
         17930                   17935                   17940

ggt aca ttt caa tcg   ttt gca aag gtt tta   cgt gac gac tcc ttt   97564
Gly Thr Phe Gln Ser   Phe Ala Lys Val Leu   Arg Asp Asp Ser Phe
         17945                   17950                   17955

gtg aag gct cga gga   gag aca tcc atc gaa   tat gct tac cgg ttt   97609
Val Lys Ala Arg Gly   Glu Thr Ser Ile Glu   Tyr Ala Tyr Arg Phe
         17960                   17965                   17970

ctg tca aac cta atc   ttt gga ggc ttg att   aac ttt tac aat ttt   97654
Leu Ser Asn Leu Ile   Phe Gly Gly Leu Ile   Asn Phe Tyr Asn Phe
         17975                   17980                   17985

ttg tta aat aaa aac   cta cat ccc gat aag   gta tcg tta gca tac   97699
Leu Leu Asn Lys Asn   Leu His Pro Asp Lys   Val Ser Leu Ala Tyr
         17990                   17995                   18000

aaa cgg tta gct gcc   tta acc ctg gag tta   ttg tct gga aca aac   97744
Lys Arg Leu Ala Ala   Leu Thr Leu Glu Leu   Leu Ser Gly Thr Asn
         18005                   18010                   18015

aaa gcc ccc tta cac   gaa gca gcg gtt aat   ggg gcg ggt gcc ggg   97789
Lys Ala Pro Leu His   Glu Ala Ala Val Asn   Gly Ala Gly Ala Gly
         18020                   18025                   18030

att gac tgt gat ggt   gca gct act tct gcc   gat aaa gcc ttc tgc   97834
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Ile Asp Cys Asp Gly   Ala Ala Thr Ser Ala   Asp Lys Ala Phe Cys
            18035                   18040                   18045

ttt acc aaa gcc ccc   gag tcc aaa gta acg   gcc tcc ata ccc gaa   97879
Phe Thr Lys Ala Pro   Glu Ser Lys Val Thr   Ala Ser Ile Pro Glu
            18050                   18055                   18060

gac ccg gat gat gta   att ttt acg gca ctt   aac gac gag gtt att   97924
Asp Pro Asp Asp Val   Ile Phe Thr Ala Leu   Asn Asp Glu Val Ile
            18065                   18070                   18075

gac ttg gta tac tgc   cag tac gaa ttt tcc   tat ccc aaa tca tcc   97969
Asp Leu Val Tyr Cys   Gln Tyr Glu Phe Ser   Tyr Pro Lys Ser Ser
            18080                   18085                   18090

aat gag gtc cat gct   cag ttt ctg tta atg   aaa gct att tac gat   98014
Asn Glu Val His Ala   Gln Phe Leu Leu Met   Lys Ala Ile Tyr Asp
            18095                   18100                   18105

ggt cga tat gcc ata   tta gca gag ctt ttc   gaa agc agc ttt aca   98059
Gly Arg Tyr Ala Ile   Leu Ala Glu Leu Phe   Glu Ser Ser Phe Thr
            18110                   18115                   18120

acc gcc ccc ttt agc   gcg tat gtc gat aat   gtt aat ttc aac gga   98104
Thr Ala Pro Phe Ser   Ala Tyr Val Asp Asn   Val Asn Phe Asn Gly
            18125                   18130                   18135

agc gag ctt ttg atc   ggc aat gtg cgg ggg   ggg ctg tta tct ttg   98149
Ser Glu Leu Leu Ile   Gly Asn Val Arg Gly   Gly Leu Leu Ser Leu
            18140                   18145                   18150

gca tta caa aca gat   acg tat acc ctt ttg   ggg tat act ttt gca   98194
Ala Leu Gln Thr Asp   Thr Tyr Thr Leu Leu   Gly Tyr Thr Phe Ala
            18155                   18160                   18165

ccc gtg cca gtc ttt   gta gag gaa ctg acc   cga aaa aag ctg tac   98239
Pro Val Pro Val Phe   Val Glu Glu Leu Thr   Arg Lys Lys Leu Tyr
            18170                   18175                   18180

cgc gaa act acc gaa   atg tta tat gct cta   cac gta cct ctt atg   98284
Arg Glu Thr Thr Glu   Met Leu Tyr Ala Leu   His Val Pro Leu Met
            18185                   18190                   18195

gtc tta cag gat caa   cat ggg ttt gtg tcc   atc gta aac gct aac   98329
Val Leu Gln Asp Gln   His Gly Phe Val Ser   Ile Val Asn Ala Asn
            18200                   18205                   18210

gta tgt gaa ttt acc   gag tct ata gag gat   gca gaa ttg gca atg   98374
Val Cys Glu Phe Thr   Glu Ser Ile Glu Asp   Ala Glu Leu Ala Met
            18215                   18220                   18225

gcc acc acg gtg gac   tat ggc ctt agt tct   aaa cta gcc atg aca   98419
Ala Thr Thr Val Asp   Tyr Gly Leu Ser Ser   Lys Leu Ala Met Thr
            18230                   18235                   18240

att gca cgc tca cag   ggt ctg agt tta gag   aag gta gct atc tgt   98464
Ile Ala Arg Ser Gln   Gly Leu Ser Leu Glu   Lys Val Ala Ile Cys
            18245                   18250                   18255

ttt acg gcg gat aaa   ctg cgc cta aat agt   gtg tat gtt gcc atg   98509
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Phe Thr Ala Asp Lys     Leu Arg Leu Asn Ser     Val Tyr Val Ala Met
              18260                   18265                   18270

tcg cgt acg gtc tcc     tct agg ttc tta aaa     atg aat cta aac cct   98554
Ser Arg Thr Val Ser     Ser Arg Phe Leu Lys     Met Asn Leu Asn Pro
              18275                   18280                   18285

cta cgg gaa cga tat     gaa aaa tcc gca gaa     att agc gat cac att   98599
Leu Arg Glu Arg Tyr     Glu Lys Ser Ala Glu     Ile Ser Asp His Ile
              18290                   18295                   18300

ctt gcc gct cta cgt     gat ccc aac gta cac     gtt gtg tat taa       98641
Leu Ala Ala Leu Arg     Asp Pro Asn Val His     Val Val Tyr
              18305                   18310

agcattgtat aaaaacacgc atgcgggctt gctgttctca tttctaggtt ttgtcttaaa   98701

tacacccgcc atgagcatct ctggaccccc aacgacgttt attttatata ggttacatgg   98761

ggttaggcgg gttcttcact ggactttacc ggatcatgaa caaacactct acgcatttac   98821

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tatgatcgtc cttcaacaca cccatacagt gaccctgcta accatagact gttctactga   98941

cttttcatca tacgcattta cgcaccggga tttccactta caggacaaac cccacgcaac   99001

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tgtggggggg gtactatccg taataacgga agatgaccta tccatgtgta tctcaattgt   99121

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cacaaaaaat ttatatttaa cggcttttaa tttgaagaca cctatcctct taacgttgat   99421

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agagggtaga gggtgctggt ttgaacgtct ccattaaccc acggggtccc cacacggcc     111557

gtgtggt atg aat ctc tgc    gga tcc cgc ggt gag    cac ccg ggc ggt    111603
        Met Asn Leu Cys    Gly Ser Arg Gly Glu    His Pro Gly Gly
            18595                  18600

gaa    tat gcc gga ctt tac    tgc aca cga cac gat    acc ccc gcg cac  111648
Glu    Tyr Ala Gly Leu Tyr    Cys Thr Arg His Asp    Thr Pro Ala His
18605                  18610                  18615

cag    gct ctc atg aac gac    gcc gaa cgg tac ttc    gcc gcc gcg cta  111693
Gln    Ala Leu Met Asn Asp    Ala Glu Arg Tyr Phe    Ala Ala Ala Leu
18620                  18625                  18630

tgc    gcc ata tct acc gag    gcc tac gag gct ttt    ata cac agc ccc  111738
Cys    Ala Ile Ser Thr Glu    Ala Tyr Glu Ala Phe    Ile His Ser Pro
18635                  18640                  18645

tcc    gag aga ccg tgc gcg    agt ttg tgg ggg agg    gca aag gac gcc  111783
Ser    Glu Arg Pro Cys Ala    Ser Leu Trp Gly Arg    Ala Lys Asp Ala
18650                  18655                  18660

ttc    gga cgg atg tgc ggg    gag ctc gca gcg gat    aga caa cgt cca  111828
Phe    Gly Arg Met Cys Gly    Glu Leu Ala Ala Asp    Arg Gln Arg Pro
18665                  18670                  18675

ccc    tcg gtt ccg ccg atc    cgc aga gcg gtg tta    tcg tta tta cgc  111873
Pro    Ser Val Pro Pro Ile    Arg Arg Ala Val Leu    Ser Leu Leu Arg
18680                  18685                  18690

gag    caa tgc atg ccg gat    cca caa tcg cat ctg    gag ctc agc gag  111918
Glu    Gln Cys Met Pro Asp    Pro Gln Ser His Leu    Glu Leu Ser Glu
18695                  18700                  18705

cgg    ctg ata ttg atg gca    tat tgg tgc tgt ttg    gga cac gcc gga  111963
Arg    Leu Ile Leu Met Ala    Tyr Trp Cys Cys Leu    Gly His Ala Gly
18710                  18715                  18720

ctt    ccg act att gga ttg    tcg ccc gat aat aaa    tgc atc cgc gcc  112008
Leu    Pro Thr Ile Gly Leu    Ser Pro Asp Asn Lys    Cys Ile Arg Ala
18725                  18730                  18735

gaa    tta tat gac cgc ccc    ggg gga att tgt cac    agg ctt ttt gac  112053
Glu    Leu Tyr Asp Arg Pro    Gly Gly Ile Cys His    Arg Leu Phe Asp
18740                  18745                  18750

gcg    tac ctg ggc tgc ggg    tcc ctt gga gtc cca    aga acc tac gag  112098
Ala    Tyr Leu Gly Cys Gly    Ser Leu Gly Val Pro    Arg Thr Tyr Glu
18755                  18760                  18765
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aga    tcc tga caccccatcc ctttatatag aaaaaaaaaa taaatttaaa            112147
Arg    Ser
18770

acatacaccg gataaaagcg tactgttttt tatttaaatt tacacgctcg gcgttgcccc 112207

ggttcggtga tcaccgggtc ttatctatat acaccgtgta actcgaaccc ccgtgactcc 112267

ctccaatcgc gttaccaaac tcttcttccg tatccgtaga ttccgagtcc tcgaaatcgt 112327

ccacttatcc aacaaattgt gacgttatat atcccaaggc aaaggccgct cccgtcatag 112387

caaatacaaa gacaattatt agcgtaatat aacagaattt tttacgatga tatattttat 112447

gttgatattt tccaattcga cgcaaaaatt catctgccgt ttcattttcg ctatcactat 112507

aataacactt ttcagccgaa cggctcggtt gtatggctgt tatcgttgta ttatttggtt 112567

gcgctcgcgg ggttaccacc gcttccatca gtaaggccac ggcctcaccc tccatggtgt 112627

tttgtccggc catagaaatc cagattgtaa ggccagcagg ctagtttaaa agtgtttaat 112687

accacacctt ttgatattta tatacatgca agattctaga ttattcatca ataggtcgtt 112747

taaagcgcgt tttcataaac gttgtcagct ataccgacat tctcacaaag aggtaaagtt 112807

accttacgtt attattaaat aaaacatgta gacattatta ataatcctag gaacaatcaa 112867

atccatattt gtaagttatg tttaacccct cccctttttg tcattatctc cgccctctta 112927

taatcggatc actttataag tgtgtcggtg agtatatttt gtacagttgt tggacaacag 112987

gttttggtt  cattaacact atcaacataa gtcgggtat  acaagtata  atg aac gac 113045
                                                        Met Asn Asp

gtt    gat gca aca gac acc    ttt gtt gga caa gga    aag ttc cgt ggc 113090
Val    Asp Ala Thr Asp Thr    Phe Val Gly Gln Gly    Lys Phe Arg Gly
18775                  18780                  18785

gcc    atc tca aca tca ccg    tca cat att atg caa    aca tgt ggg ttt 113135
Ala    Ile Ser Thr Ser Pro    Ser His Ile Met Gln    Thr Cys Gly Phe
18790                  18795                  18800

ata    caa cag atg ttt cca    gtt gaa atg tcg ccc    ggc ata gaa tct 113180
Ile    Gln Gln Met Phe Pro    Val Glu Met Ser Pro    Gly Ile Glu Ser
18805                  18810                  18815

gag    gat gat ccc aat tat    gac gtt aac atg gat    ata cag tct ttt 113225
Glu    Asp Asp Pro Asn Tyr    Asp Val Asn Met Asp    Ile Gln Ser Phe
18820                  18825                  18830

aat    ata ttt gat ggt gta    cac gaa act gaa gcc    gaa gcc tct gtg 113270
Asn    Ile Phe Asp Gly Val    His Glu Thr Glu Ala    Glu Ala Ser Val
18835                  18840                  18845

gca    ttg tgc gca gaa gca    cgc gtt gga att aat    aaa gcg gga ttt 113315
Ala    Leu Cys Ala Glu Ala    Arg Val Gly Ile Asn    Lys Ala Gly Phe
18850                  18855                  18860
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gta   ata  tta  aaa  acg  ttt   aca  cca  ggg  gcg  gaa   ggt  ttt  gcg  ttt  113360
Val   Ile  Leu  Lys  Thr  Phe   Thr  Pro  Gly  Ala  Glu   Gly  Phe  Ala  Phe
18865                   18870                     18875

gcg   tgt  atg  gac  agt  aaa   aca  tgt  gaa  cat  gtg   gtc  att  aaa  gcg  113405
Ala   Cys  Met  Asp  Ser  Lys   Thr  Cys  Glu  His  Val   Val  Ile  Lys  Ala
18880                   18885                     18890

ggt   caa  cgt  caa  gga  acg   gcc  acc  gag  gca  acc   gtg  tta  aga  gcg  113450
Gly   Gln  Arg  Gln  Gly  Thr   Ala  Thr  Glu  Ala  Thr   Val  Leu  Arg  Ala
18895                   18900                     18905

tta   acc  cac  cca  tcc  gtt   gta  cag  ctt  aaa  gga   acg  ttt  acg  tat  113495
Leu   Thr  His  Pro  Ser  Val   Val  Gln  Leu  Lys  Gly   Thr  Phe  Thr  Tyr
18910                   18915                     18920

aac   aaa  atg  aca  tgt  ctt   ata  tta  cca  cgt  tac   cga  aca  gat  tta  113540
Asn   Lys  Met  Thr  Cys  Leu   Ile  Leu  Pro  Arg  Tyr   Arg  Thr  Asp  Leu
18925                   18930                     18935

tac   tgc  tat  cta  gct  gca   aag  cgc  aac  ctc  ccc   ata  tgt  gac  att  113585
Tyr   Cys  Tyr  Leu  Ala  Ala   Lys  Arg  Asn  Leu  Pro   Ile  Cys  Asp  Ile
18940                   18945                     18950

tta   gca  att  cag  cga  tct   gta  tta  cgc  gcg  tta   cag  tat  ctt  cat  113630
Leu   Ala  Ile  Gln  Arg  Ser   Val  Leu  Arg  Ala  Leu   Gln  Tyr  Leu  His
18955                   18960                     18965

aat   aac  agt  att  att  cac   cgt  gat  ata  aaa  tct   gaa  aat  ata  ttt  113675
Asn   Asn  Ser  Ile  Ile  His   Arg  Asp  Ile  Lys  Ser   Glu  Asn  Ile  Phe
18970                   18975                     18980

att   aac  cac  cca  ggt  gat   gtt  tgt  gtg  gga  gac   ttt  gga  gca  gcg  113720
Ile   Asn  His  Pro  Gly  Asp   Val  Cys  Val  Gly  Asp   Phe  Gly  Ala  Ala
18985                   18990                     18995

tgt   ttc  ccc  gtg  gat  att   aat  gcc  aac  agg  tat   tat  ggc  tgg  gct  113765
Cys   Phe  Pro  Val  Asp  Ile   Asn  Ala  Asn  Arg  Tyr   Tyr  Gly  Trp  Ala
19000                   19005                     19010

gga   aca  atc  gcc  aca  aac   tct  cct  gag  tta  ttg   gct  aga  gat  cca  113810
Gly   Thr  Ile  Ala  Thr  Asn   Ser  Pro  Glu  Leu  Leu   Ala  Arg  Asp  Pro
19015                   19020                     19025

tat   gga  cct  gcc  gtg  gac   ata  tgg  agt  gcc  ggg   att  gta  tta  ttt  113855
Tyr   Gly  Pro  Ala  Val  Asp   Ile  Trp  Ser  Ala  Gly   Ile  Val  Leu  Phe
19030                   19035                     19040

gaa   atg  gct  aca  gga  cag   aac  tcg  tta  ttt  gaa   cga  gac  ggt  tta  113900
Glu   Met  Ala  Thr  Gly  Gln   Asn  Ser  Leu  Phe  Glu   Arg  Asp  Gly  Leu
19045                   19050                     19055

gat   ggc  aat  tgt  gac  agt   gag  cgt  caa  att  aaa   ctt  att  ata  cga  113945
Asp   Gly  Asn  Cys  Asp  Ser   Glu  Arg  Gln  Ile  Lys   Leu  Ile  Ile  Arg
19060                   19065                     19070

cga   tct  gga  act  cat  ccc   aat  gaa  ttt  ccc  att   aac  cct  aca  tca  113990
Arg   Ser  Gly  Thr  His  Pro   Asn  Glu  Phe  Pro  Ile   Asn  Pro  Thr  Ser
19075                   19080                     19085
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aat    ctt cgt cga caa tac    att ggt ttg gca aaa    cgg tct tct cga 114035
Asn    Leu Arg Arg Gln Tyr    Ile Gly Leu Ala Lys    Arg Ser Ser Arg
19090                  19095                  19100

aaa    ccc gga tcc agg cca    ttg tgg aca aat cta    tat gag ttg cca 114080
Lys    Pro Gly Ser Arg Pro    Leu Trp Thr Asn Leu    Tyr Glu Leu Pro
19105                  19110                  19115

att    gat ttg gag tat ttg    ata tgt aag atg tta    tcg ttt gac gca 114125
Ile    Asp Leu Glu Tyr Leu    Ile Cys Lys Met Leu    Ser Phe Asp Ala
19120                  19125                  19130

cgt    cat cga cca tca gca    gag gtg ttg ctt aac    cac tct gtt ttc 114170
Arg    His Arg Pro Ser Ala    Glu Val Leu Leu Asn    His Ser Val Phe
19135                  19140                  19145

caa    act ctt ccc gat cca    tat cca aat cca atg    gaa gtt gga gat 114215
Gln    Thr Leu Pro Asp Pro    Tyr Pro Asn Pro Met    Glu Val Gly Asp
19150                  19155                  19160

taa aattcattaa gcctgttaat aaaatattgt ataaattgtg tttataacgt        114268

ataacccgtt aaggcaaata gggtacaaac gcgcaatgtt ttgaaatact aatataaata 114328

acataaccaa tagaaactta atacagagtc acgccccatt acaacaagga taaaacacgg 114388

gatcattttc ttaacattgt agtagcgctg aaaagcgtcc cctcccccgg ctcacagagc 114448

tgctcttcgg tgtagttggg tatactggtg cgcctcattt aatcgcg atg    ttt tta 114504
                                                   Met    Phe Leu
                                                   19165

atc caa tgt    ttg ata tcg gcc gtt    ata ttt tac ata caa    gtg acc 114549
Ile Gln Cys    Leu Ile Ser Ala Val    Ile Phe Tyr Ile Gln    Val Thr
        19170                  19175                  19180

aac gct ttg    atc ttc aag ggc gac    cac gtg agc ttg caa    gtt aac 114594
Asn Ala Leu    Ile Phe Lys Gly Asp    His Val Ser Leu Gln    Val Asn
        19185                  19190                  19195

agc agt ctc    acg tct atc ctt att    ccc atg caa aat gat    aat tat 114639
Ser Ser Leu    Thr Ser Ile Leu Ile    Pro Met Gln Asn Asp    Asn Tyr
        19200                  19205                  19210

aca gag ata    aaa gga cag ctt gtc    ttt att gga gag caa    cta cct 114684
Thr Glu Ile    Lys Gly Gln Leu Val    Phe Ile Gly Glu Gln    Leu Pro
        19215                  19220                  19225

acc ggg aca    aac tat agc gga aca    ctg gaa ctg tta tac    gcg gat 114729
Thr Gly Thr    Asn Tyr Ser Gly Thr    Leu Glu Leu Leu Tyr    Ala Asp
        19230                  19235                  19240

acg gtg gcg    ttt tgt ttc cgg tca    gta caa gta ata aga    tac gac 114774
Thr Val Ala    Phe Cys Phe Arg Ser    Val Gln Val Ile Arg    Tyr Asp
        19245                  19250                  19255

gga tgt ccc    cgg att aga acg agc    gct ttt att tcg tgt    agg tac 114819
Gly Cys Pro    Arg Ile Arg Thr Ser    Ala Phe Ile Ser Cys    Arg Tyr
        19260                  19265                  19270
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aaa cat tcg   tgg cat tat ggt aac   tca acg gat cgg ata   tca aca 114864
Lys His Ser   Trp His Tyr Gly Asn   Ser Thr Asp Arg Ile   Ser Thr
        19275                19280                19285

gag ccg gat   gct ggt gta atg ttg   aaa att acc aaa ccg   gga ata 114909
Glu Pro Asp   Ala Gly Val Met Leu   Lys Ile Thr Lys Pro   Gly Ile
        19290                19295                19300

aat gat gct   ggt gtg tat gta ctt   ctt gtt cgg tta gac   cat agc 114954
Asn Asp Ala   Gly Val Tyr Val Leu   Leu Val Arg Leu Asp   His Ser
        19305                19310                19315

aga tcc acc   gat ggt ttc att ctt   ggt gta aat gta tat   aca gcg 114999
Arg Ser Thr   Asp Gly Phe Ile Leu   Gly Val Asn Val Tyr   Thr Ala
        19320                19325                19330

ggc tcg cat   cac aac att cac ggg   gtt atc tac act tct   ccg tct 115044
Gly Ser His   His Asn Ile His Gly   Val Ile Tyr Thr Ser   Pro Ser
        19335                19340                19345

cta cag aat   gga tat tct aca aga   gcc ctt ttt caa caa   gct cgt 115089
Leu Gln Asn   Gly Tyr Ser Thr Arg   Ala Leu Phe Gln Gln   Ala Arg
        19350                19355                19360

ttg tgt gat   tta ccc gcg aca ccc   aaa ggg tcc ggt acc   tcc ctg 115134
Leu Cys Asp   Leu Pro Ala Thr Pro   Lys Gly Ser Gly Thr   Ser Leu
        19365                19370                19375

ttt caa cat   atg ctt gat ctt cgt   gcc ggt aaa tcg tta   gag gat 115179
Phe Gln His   Met Leu Asp Leu Arg   Ala Gly Lys Ser Leu   Glu Asp
        19380                19385                19390

aac cct tgg   tta cat gag gac gtt   gtt acg aca gaa act   aag tcc 115224
Asn Pro Trp   Leu His Glu Asp Val   Val Thr Thr Glu Thr   Lys Ser
        19395                19400                19405

gtt gtt aag   gag ggg ata gaa aat   cac gta tat cca acg   gat atg 115269
Val Val Lys   Glu Gly Ile Glu Asn   His Val Tyr Pro Thr   Asp Met
        19410                19415                19420

tcc acg tta   ccc gaa aag tcc ctt   aat gat cct cca gaa   aat cta 115314
Ser Thr Leu   Pro Glu Lys Ser Leu   Asn Asp Pro Pro Glu   Asn Leu
        19425                19430                19435

ctt ata att   att cct ata gta gcg   tct gtc atg atc ctc   acc gcc 115359
Leu Ile Ile   Ile Pro Ile Val Ala   Ser Val Met Ile Leu   Thr Ala
        19440                19445                19450

atg gtt att   gtt att gta ata agc   gtt aag cga cgt aga   att aaa 115404
Met Val Ile   Val Ile Val Ile Ser   Val Lys Arg Arg Arg   Ile Lys
        19455                19460                19465

aaa cat cca   att tat cgc cca aat   aca aaa aca aga agg   ggc ata 115449
Lys His Pro   Ile Tyr Arg Pro Asn   Thr Lys Thr Arg Arg   Gly Ile
        19470                19475                19480

caa aat gcg   aca cca gaa tcc gat   gtg atg ttg gag gcc   gcc att 115494
Gln Asn Ala   Thr Pro Glu Ser Asp   Val Met Leu Glu Ala   Ala Ile
        19485                19490                19495
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gca caa cta    gca acg att cgc gaa    gaa tcc ccc cca cat    tcc gtt 115539
Ala Gln Leu    Ala Thr Ile Arg Glu    Glu Ser Pro Pro His    Ser Val
        19500                  19505                  19510

gta aac ccg    ttt gtt aaa tag aactaattat cccggatttt atattaaata    115590
Val Asn Pro    Phe Val Lys
        19515

aactatatgc gttttattta gcgttttgat tacgcgttgt gatatgaggg gaaggattaa    115650

gaatctccta actataagtt aacacgccca catttgggcg gggatgtttt atgaagcctt    115710

aaaggccgag ctggtataca cgagagcagt ccatggtttt agacctcggg cgaattgcgt    115770

ggttttaagt gactatattc cgagggtcgc ctgtaat atg ggg    aca gtt aat    115822
                                            Met Gly    Thr Val Asn
                                                    19520

aaa cct    gtg gtg ggg gta ttg    atg ggg ttc gga att    atc acg gga 115867
Lys Pro    Val Val Gly Val Leu    Met Gly Phe Gly Ile    Ile Thr Gly
        19525                  19530                  19535

acg ttg    cgt ata acg aat ccg    gtc aga gca tcc gtc    ttg cga tac 115912
Thr Leu    Arg Ile Thr Asn Pro    Val Arg Ala Ser Val    Leu Arg Tyr
        19540                  19545                  19550

gat gat    ttt cac acc gat gaa    gac aaa ctg gat aca    aac tcc gta 115957
Asp Asp    Phe His Thr Asp Glu    Asp Lys Leu Asp Thr    Asn Ser Val
        19555                  19560                  19565

tat gag    cct tac tac cat tca    gat cat gcg gag tct    tca tgg gta 116002
Tyr Glu    Pro Tyr Tyr His Ser    Asp His Ala Glu Ser    Ser Trp Val
        19570                  19575                  19580

aat cgg    gga gag tct tcg cga    aaa gcg tac gat cat    aac tca cct 116047
Asn Arg    Gly Glu Ser Ser Arg    Lys Ala Tyr Asp His    Asn Ser Pro
        19585                  19590                  19595

tat ata    tgg cca cgt aat gat    tat gat gga ttt tta    gag aac gca 116092
Tyr Ile    Trp Pro Arg Asn Asp    Tyr Asp Gly Phe Leu    Glu Asn Ala
        19600                  19605                  19610

cac gaa    cac cat ggg gtg tat    aat cag ggc cgt ggt    atc gat agc 116137
His Glu    His His Gly Val Tyr    Asn Gln Gly Arg Gly    Ile Asp Ser
        19615                  19620                  19625

ggg gaa    cgg tta atg caa ccc    aca caa atg tct gca    cag gag gat 116182
Gly Glu    Arg Leu Met Gln Pro    Thr Gln Met Ser Ala    Gln Glu Asp
        19630                  19635                  19640

ctt ggg    gac gat acg ggc atc    cac gtt atc cct acg    tta aac ggc 116227
Leu Gly    Asp Asp Thr Gly Ile    His Val Ile Pro Thr    Leu Asn Gly
        19645                  19650                  19655

gat gac    aga cat aaa att gta    aat gtg gac caa cgt    caa tac ggt 116272
Asp Asp    Arg His Lys Ile Val    Asn Val Asp Gln Arg    Gln Tyr Gly
        19660                  19665                  19670

gac gtg    ttt aaa gga gat ctt    aat cca aaa ccc caa    ggc caa aga 116317
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Asp Val    Phe Lys Gly Asp Leu    Asn Pro Lys Pro Gln    Gly Gln Arg
    19675                  19680                  19685

ctc att    gag gtg tca gtg gaa    gaa aat cac ccg ttt    act tta cgc 116362
Leu Ile    Glu Val Ser Val Glu    Glu Asn His Pro Phe    Thr Leu Arg
    19690                  19695                  19700

gca ccg    att cag cgg att tat    gga gtc cgg tac acc    gag act tgg 116407
Ala Pro    Ile Gln Arg Ile Tyr    Gly Val Arg Tyr Thr    Glu Thr Trp
    19705                  19710                  19715

agc ttt    ttg ccg tca tta acc    tgt acg gga gac gca    gcg ccc gcc 116452
Ser Phe    Leu Pro Ser Leu Thr    Cys Thr Gly Asp Ala    Ala Pro Ala
    19720                  19725                  19730

atc cag    cat ata tgt tta aaa    cat aca aca tgc ttt    caa gac gtg 116497
Ile Gln    His Ile Cys Leu Lys    His Thr Thr Cys Phe    Gln Asp Val
    19735                  19740                  19745

gtg gtg    gat gtg gat tgc gcg    gaa aat act aaa gag    gat cag ttg 116542
Val Val    Asp Val Asp Cys Ala    Glu Asn Thr Lys Glu    Asp Gln Leu
    19750                  19755                  19760

gcc gaa    atc agt tac cgt ttt    caa ggt aag aag gaa    gcg gac caa 116587
Ala Glu    Ile Ser Tyr Arg Phe    Gln Gly Lys Lys Glu    Ala Asp Gln
    19765                  19770                  19775

ccg tgg    att gtt gta aac acg    agc aca ctg ttt gat    gaa ctc gaa 116632
Pro Trp    Ile Val Val Asn Thr    Ser Thr Leu Phe Asp    Glu Leu Glu
    19780                  19785                  19790

tta gac    ccc ccc gag att gaa    ccg ggt gtc ttg aaa    gta ctt cgg 116677
Leu Asp    Pro Pro Glu Ile Glu    Pro Gly Val Leu Lys    Val Leu Arg
    19795                  19800                  19805

aca gaa    aaa caa tac ttg ggt    gtg tac att tgg aac    atg cgc ggc 116722
Thr Glu    Lys Gln Tyr Leu Gly    Val Tyr Ile Trp Asn    Met Arg Gly
    19810                  19815                  19820

tcc gat    ggt acg tct acc tac    gcc acg ttt ttg gtc    acc tgg aaa 116767
Ser Asp    Gly Thr Ser Thr Tyr    Ala Thr Phe Leu Val    Thr Trp Lys
    19825                  19830                  19835

ggg gat    gaa aaa aca aga aac    cct acg ccc gca gta    act cct caa 116812
Gly Asp    Glu Lys Thr Arg Asn    Pro Thr Pro Ala Val    Thr Pro Gln
    19840                  19845                  19850

cca aga    ggg gct gag ttt cat    atg tgg aat tac cac    tcg cat gta 116857
Pro Arg    Gly Ala Glu Phe His    Met Trp Asn Tyr His    Ser His Val
    19855                  19860                  19865

ttt tca    gtt ggt gat acg ttt    agc ttg gca atg cat    ctt cag tat 116902
Phe Ser    Val Gly Asp Thr Phe    Ser Leu Ala Met His    Leu Gln Tyr
    19870                  19875                  19880

aag ata    cat gaa gcg cca ttt    gat ttg ctg tta gag    tgg ttg tat 116947
Lys Ile    His Glu Ala Pro Phe    Asp Leu Leu Leu Glu    Trp Leu Tyr
    19885                  19890                  19895

gtc ccc    atc gat cct aca tgt    caa cca atg cgg tta    tat tct acg 116992
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Val Pro   Ile Asp Pro Thr Cys   Gln Pro Met Arg Leu   Tyr Ser Thr
    19900                19905                19910

tgt ttg   tat cat ccc aac gca   ccc caa tgc ctc tct   cat atg aat 117037
Cys Leu   Tyr His Pro Asn Ala   Pro Gln Cys Leu Ser   His Met Asn
    19915                19920                19925

tcc ggt   tgt aca ttt acc tcg   cca cat tta gcc cag   cgt gtt gca 117082
Ser Gly   Cys Thr Phe Thr Ser   Pro His Leu Ala Gln   Arg Val Ala
    19930                19935                19940

agc aca   gtg tat caa aat tgt   gaa cat gca gat aac   tac acc gca 117127
Ser Thr   Val Tyr Gln Asn Cys   Glu His Ala Asp Asn   Tyr Thr Ala
    19945                19950                19955

tat tgt   ctg gga ata tct cat   atg gag cct agc ttt   ggt cta atc 117172
Tyr Cys   Leu Gly Ile Ser His   Met Glu Pro Ser Phe   Gly Leu Ile
    19960                19965                19970

tta cac   gac ggg ggc acc acg   tta aag ttt gta gat   aca ccc gag 117217
Leu His   Asp Gly Gly Thr Thr   Leu Lys Phe Val Asp   Thr Pro Glu
    19975                19980                19985

agt ttg   tcg gga tta tac gtt   ttt gtg gtg tat ttt   aac ggg cat 117262
Ser Leu   Ser Gly Leu Tyr Val   Phe Val Val Tyr Phe   Asn Gly His
    19990                19995                20000

gtt gaa   gcc gta gca tac act   gtt gta tcc aca gta   gat cat ttt 117307
Val Glu   Ala Val Ala Tyr Thr   Val Val Ser Thr Val   Asp His Phe
    20005                20010                20015

gta aac   gca att gaa gag cgt   gga ttt ccg cca acg   gcc ggt cag 117352
Val Asn   Ala Ile Glu Glu Arg   Gly Phe Pro Pro Thr   Ala Gly Gln
    20020                20025                20030

cca ccg   gcg act act aaa ccc   aag gaa att acc ccc   gta aac ccc 117397
Pro Pro   Ala Thr Thr Lys Pro   Lys Glu Ile Thr Pro   Val Asn Pro
    20035                20040                20045

gga acg   tca cca ctt cta cga   tat gcc gca tgg acc   gga ggg ctt 117442
Gly Thr   Ser Pro Leu Leu Arg   Tyr Ala Ala Trp Thr   Gly Gly Leu
    20050                20055                20060

gca gca   gta gta ctt tta tgt   ctc gta ata ttt tta   atc tgt acg 117487
Ala Ala   Val Val Leu Leu Cys   Leu Val Ile Phe Leu   Ile Cys Thr
    20065                20070                20075

gct aaa   cga atg agg gtt aaa   gcc tat agg gta gac   aag tcc ccg 117532
Ala Lys   Arg Met Arg Val Lys   Ala Tyr Arg Val Asp   Lys Ser Pro
    20080                20085                20090

tat aac   caa agc atg tat tac   gct ggc ctt cca gtg   gac gat ttc 117577
Tyr Asn   Gln Ser Met Tyr Tyr   Ala Gly Leu Pro Val   Asp Asp Phe
    20095                20100                20105

gag gac   tcg gaa tct acg gat   acg gaa gaa gag ttt   ggt aac gcg 117622
Glu Asp   Ser Glu Ser Thr Asp   Thr Glu Glu Glu Phe   Gly Asn Ala
    20110                20115                20120

att gga   ggg agt cac ggg ggt   tcg agt tac acg gtg   tat ata gat 117667
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    Ile Gly    Gly Ser His Gly Gly    Ser Ser Tyr Thr Val    Tyr Ile Asp
      20125                  20130                  20135

aag acc    cgg tga tcaccgaacc ggggcaacgc cgagcgtgta aatttaaata        117719
Lys Thr    Arg
      20140


aaaaacagta cgcttttatc cggtgtatgt tttaaattta tttttttttt ctatataaag   117779

ggatggggtg tcaggatctc tcgtaggttc ttgggactcc aagggacccg cagcccaggt   117839

acgcgtcaaa aagcctgtga caaattcccc cggggcggtc atataattcg gcgcggatgc   117899

atttattatc gggcgacaat ccaatagtcg gaagtccggc gtgtcccaaa cagcaccaat   117959

atgccatcaa tatcagccgc tcgctgagct ccagatgcga ttgtggatcc ggcatgcatt   118019

gctcgcgtaa taacgataac accgctctgc ggatcggcgg aaccgagggt ggacgttgtc   118079

tatccgctgc gagctccccg cacatccgtc cgaaggcgtc ctttgccctc ccccacaaac   118139

tcgcgcacgg tctctcggag gggctgtgta taaaagcctc gtaggcctcg gtagatatgg   118199

cgcatagcgc ggcggcgaag taccgttcgg cgtcgttcat gagagcctgg tgcgcggggg   118259

tatcgtgtcg tgtgcagtaa agtccggcat attcaccgcc cgggtgctca ccgcgggatc   118319

cgcagagatt cataccacac ggcccgtgtg gggaccccgt gggttaatgg agacgttcaa   118379

accagcaccc tctaccctct aatatccaca acaccccact cccccacaga cagacatcaa   118439

aaaaagacac gagccaaacc attgtattta tttataaaga ctacacgcca tggggggcg    118499

gtatatcatg ccggcgcggg gcttcgtgtc gacgtcgctt ccaatctaca ccccctcgc    118559

ccaacgcggt gagcgctttc gcggctgtat attccgcggt ttctgcaccc gcgtatcgct   118619

cgatggcacg ctggggtctc tttggggacg gggtgttgca cccatccccg tctcgataac   118679

aatcgccggg taccccgtct ggttcacaag aatcggtgct ctcctctgat tcttcttcca   118739

ctataaagtc ttccccgtcc gatgattccg cgtcggaatc ccgaaattca attacatccg   118799

atggcgtaga cccatcatcg tcgctatcgt cttcaccacc atcatcagat acgtcacatt   118859

ccagtgcgct cctatgcaaa ggaacattcg gcgcctcaat gaacccgtct tcccccgag    118919

ggggtcgatg ggacacttcc attaaagtag cgcgtaagca ctgcgtctgg gtgggttgaa   118979

gctgtaacaa ttcctcccag cacgctaacg tgggacgctg tctggtgcga cccattagat   119039

aaaagtcgag gcatatgcgc cgcaatcttc gtgaatctcg cgtgacgcgt ccgacgact    119099

gtgcaataca taaaaaaaca cggttgatgt cctcaacgag cctggccggg tggatctccc   119159

aacccggagt acaaaacgcg ccggggcccc gcgacgtatc ccggccgttc aggggtcctg   119219

gtgcagatcc atattccatc tttccgttaa catcaaccga tgccccgggt tttgactcgg   119279

acgagtcgcc ccgcgtagcc ggtgaggtgc aaaacatgtc cttggggccg tagtaacctt   119339
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ttccttaaa accgactcga cgctgtcgcg ttatgaatcg gacgaaccct gcacaacaaa 119399

acacacaccc aaacgtttac atctatgaat aaggctactt ggtaaaatg gcaatggggg 119459

attccggggc gggagacctt cgattgggtt gcctttataa caccaaaaaa agggggggggc 119519

cccgtgtgtt tttttttatc acgtcaaatc gatttaaaa agcctgccgc tccatttgga 119579

atatatatat tctgtgaaaa gcccgcccac accccataaa accgcgacat cgcgggaaca 119639

cgcgcgaaca agaaactctc tctctttctc tatatatata tatatatata tatatatata 119699

tagaaagaaa gtgcgaacgg tggttggaca catgccaaaa catgaaaacc catacagtga 119759

aaaaacggga agtgcgaatg cagatcaaaa gagtgtatcc gattggcgta caccacagac 119819

atgcggacgc ccaatttaac ccccccccctt tttcacccccc ccacccccacc ccattccacc 119879

ccaggaagtg cgaacgggtt tacatgcctc agatatgaag ttcttcgact tgttttttgaa 119939

taaatttttt tgtgattttc tacaacggtt tagagaatta tggttataaa catcggcggg 119999

gtaccgcgcc ccctccccat cggcggggta ccgcgcccccc tccccatcgg cggggtaccg 120059

cgcccctcc ccatcggcgg ggtaccgcgc ccctccccca tcggcggggt accgcgcccc 120119

ctccccatcg gcggggggtt acgtgaacac cacaaccccg tgtgtatttt atgggttatc 120179

gcgggcttcg tgccgcctga cataatcgtt gggaggggtg gtggtgtata cgcttgttga 120239

ttgcgcgaac gtaatgacga cggagaggga cccaaacaca ccgtcgacgt gcatttgatt 120299

aactagatgc cggatgggtg gaaacaaccc gtgttatata agatgttttg catgtgagac 120359

aaccccaatt gtgtttatgt atattatata tcgtctgtag acacacgatg attggttgtt 120419

atttaaacat atgtaaatga aattcacatg tctggtatcc cttgttatga tgttgtaagg 120479

tatgcggaaa tagacaccgg gcgtacatcg ccaaccagcg gtctctcctt aaacgcatac 120539

tatggtccat gaacttcccg cctcgagtct cgtccaatca ctacatcgtc ttatcattaa 120599

gaatatttac acggtgacga cacggggagg aaatatgcgg tcgagggggg ggcacaacac 120659

gttttaagta ctgttggaac tccctcacca accgcaatcg caatcctttg aaggctgcga 120719

gagcgtttgg aaaactcggg tacgtctaaa ttcaccccag tgcg atg gat acg   120772
                                                       Met Asp Thr

ccg   ccg atg cag cgc tct   aca ccc caa cgc gcg   ggg tcg cct gat 120817
Pro   Pro Met Gln Arg Ser   Thr Pro Gln Arg Ala   Gly Ser Pro Asp
20145   20150   20155

act   ttg gag tta atg gac   ctg ttg gac gcg gcc   gcg gcg gcc gcc 120862
Thr   Leu Glu Leu Met Asp   Leu Leu Asp Ala Ala   Ala Ala Ala Ala
20160   20165   20170

gaa   cac agg gcc cgg gtg   gtc acc tcg agt cag   cct gac gat cta 120907

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Glu    His Arg Ala Arg Val   Val Thr Ser Ser Gln   Pro Asp Asp Leu
20175                  20180                 20185

cta    ttt gga gag aac ggg   gtc atg gtg gga cgg   gaa cac gag atc 120952
Leu    Phe Gly Glu Asn Gly   Val Met Val Gly Arg   Glu His Glu Ile
20190                  20195                 20200

gtt    tca att ccc tcc gta   tcg gga ctt caa cca   gaa ccc aga acg 120997
Val    Ser Ile Pro Ser Val   Ser Gly Leu Gln Pro   Glu Pro Arg Thr
20205                  20210                 20215

gaa    gat gtt ggc gaa gag   cta aca caa gac gac   tac gta tgc gag 121042
Glu    Asp Val Gly Glu Glu   Leu Thr Gln Asp Asp   Tyr Val Cys Glu
20220                  20225                 20230

gac    ggt cag gat cta atg   ggc tcg cct gta atc   ccg ctg gcc gag 121087
Asp    Gly Gln Asp Leu Met   Gly Ser Pro Val Ile   Pro Leu Ala Glu
20235                  20240                 20245

gtc    ttc cac acc cga ttc   tcg gag gcc ggc gcg   cga gaa cca aca 121132
Val    Phe His Thr Arg Phe   Ser Glu Ala Gly Ala   Arg Glu Pro Thr
20250                  20255                 20260

gga    gcc gat cgc tcc ctt   gag aca gtc tct ctc   gga acg aag ctt 121177
Gly    Ala Asp Arg Ser Leu   Glu Thr Val Ser Leu   Gly Thr Lys Leu
20265                  20270                 20275

gct    agg tct cca aaa cca   ccg atg aac gat ggg   gaa acg ggc aga 121222
Ala    Arg Ser Pro Lys Pro   Pro Met Asn Asp Gly   Glu Thr Gly Arg
20280                  20285                 20290

ggt    acg acc cct ccg ttc   ccg cag gcc ttc tcc   cct gta tcc ccc 121267
Gly    Thr Thr Pro Pro Phe   Pro Gln Ala Phe Ser   Pro Val Ser Pro
20295                  20300                 20305

gcg    tct cct gtt gga gac   gcc gcc ggg aac gat   caa cgg gaa gac 121312
Ala    Ser Pro Val Gly Asp   Ala Ala Gly Asn Asp   Gln Arg Glu Asp
20310                  20315                 20320

cag    cgg tct ata ccc cga   caa acg acg aga gga   aat tca cca ggt 121357
Gln    Arg Ser Ile Pro Arg   Gln Thr Thr Arg Gly   Asn Ser Pro Gly
20325                  20330                 20335

ttg    ccg tcg gtg gtc cat   cga gac aga caa act   cag tcc atc tcg 121402
Leu    Pro Ser Val Val His   Arg Asp Arg Gln Thr   Gln Ser Ile Ser
20340                  20345                 20350

ggt    aaa aag ccg ggc gat   gag caa gcg ggt cat   gcg cat gca tcg 121447
Gly    Lys Lys Pro Gly Asp   Glu Gln Ala Gly His   Ala His Ala Ser
20355                  20360                 20365

ggg    gac gga gta gtt ctc   cag aaa act caa cgg   ccc gct cag gga 121492
Gly    Asp Gly Val Val Leu   Gln Lys Thr Gln Arg   Pro Ala Gln Gly
20370                  20375                 20380

aag    agc ccg aag aaa aag   act ttg aag gtt aag   gtc cca ctc ccg 121537
Lys    Ser Pro Lys Lys Lys   Thr Leu Lys Val Lys   Val Pro Leu Pro
20385                  20390                 20395

gcg    cgg aaa ccc ggt gga   cct gta ccc ggc ccg   gtt gag caa ttg 121582
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Ala    Arg Lys Pro Gly Gly    Pro Val Pro Gly Pro    Val Glu Gln Leu
20400                   20405                  20410

tac    cac gtc ctt tcg gac    agc gtt ccc gct aag    ggg gca aag gcg 121627
Tyr    His Val Leu Ser Asp    Ser Val Pro Ala Lys    Gly Ala Lys Ala
20415                   20420                  20425

gac    ctg ccg ttt gag acc    gat gat acc cgc cca    agg aaa cat gat 121672
Asp    Leu Pro Phe Glu Thr    Asp Asp Thr Arg Pro    Arg Lys His Asp
20430                   20435                  20440

gcc    cgg ggt ata aca cct    cgc gtc cct gga cgt    tcg tcg ggg ggc 121717
Ala    Arg Gly Ile Thr Pro    Arg Val Pro Gly Arg    Ser Ser Gly Gly
20445                   20450                  20455

aaa    cct aga gcg ttt ttg    gcc ctg ccg gga aga    tcc cac gca cca 121762
Lys    Pro Arg Ala Phe Leu    Ala Leu Pro Gly Arg    Ser His Ala Pro
20460                   20465                  20470

gac    ccg att gag gat gac    agc cca gtg gag aaa    aag cca aag agt 121807
Asp    Pro Ile Glu Asp Asp    Ser Pro Val Glu Lys    Lys Pro Lys Ser
20475                   20480                  20485

cgt    gag ttt gtt tcg tct    tca tcc tct tcc tcg    tcg tgg gga tcg 121852
Arg    Glu Phe Val Ser Ser    Ser Ser Ser Ser Ser    Ser Trp Gly Ser
20490                   20495                  20500

tca    tcg gag gat gaa gac    gat gaa ccc cgg cgc    gtt tcg gtg gga 121897
Ser    Ser Glu Asp Glu Asp    Asp Glu Pro Arg Arg    Val Ser Val Gly
20505                   20510                  20515

agt    gaa act aca ggc agc    agg tcc gga cgc gaa    cac gcc cct tcc 121942
Ser    Glu Thr Thr Gly Ser    Arg Ser Gly Arg Glu    His Ala Pro Ser
20520                   20525                  20530

ccg    tca aat tcg gat gat    tcg gac tca aat gat    ggt ggg tcg acg 121987
Pro    Ser Asn Ser Asp Asp    Ser Asp Ser Asn Asp    Gly Gly Ser Thr
20535                   20540                  20545

aaa    caa aat atc caa ccg    gga tat cga tcc atc    agc ggt ccc gat 122032
Lys    Gln Asn Ile Gln Pro    Gly Tyr Arg Ser Ile    Ser Gly Pro Asp
20550                   20555                  20560

ccg    agg att cgt aag acc    aaa cgt ctt gcg ggg    gaa ccg ggg cgc 122077
Pro    Arg Ile Arg Lys Thr    Lys Arg Leu Ala Gly    Glu Pro Gly Arg
20565                   20570                  20575

cag    aga cag aaa tca ttt    tcc ctg ccg cga tcc    aga acc ccg ata 122122
Gln    Arg Gln Lys Ser Phe    Ser Leu Pro Arg Ser    Arg Thr Pro Ile
20580                   20585                  20590

att    ccc ccg gtg tcg ggg    ccg ctc atg atg ccc    gac gga agc cct 122167
Ile    Pro Pro Val Ser Gly    Pro Leu Met Met Pro    Asp Gly Ser Pro
20595                   20600                  20605

tgg    ccc gga tcg gca ccc    ctc cca tcc aac agg    gtg cgg ttt gga 122212
Trp    Pro Gly Ser Ala Pro    Leu Pro Ser Asn Arg    Val Arg Phe Gly
20610                   20615                  20620

ccg    tcc ggg gag acc aga    gag ggt cac tgg gag    gat gag gct gtg 122257
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Pro     Ser Gly Glu Thr Arg     Glu Gly His Trp Glu     Asp Glu Ala Val
20625                   20630                   20635

aga     gcg gcg cgg gct cgt     tac gag gcc tca acg     gaa ccc gtg ccg 122302
Arg     Ala Ala Arg Ala Arg     Tyr Glu Ala Ser Thr     Glu Pro Val Pro
20640                   20645                   20650

ctt     tac gtg ccg gag ttg     gga gat ccg gct aga     cag tac cgc gcg 122347
Leu     Tyr Val Pro Glu Leu     Gly Asp Pro Ala Arg     Gln Tyr Arg Ala
20655                   20660                   20665

ctg     att aac ctg atc tac     tgt cca gac aga gac     cct ata gca tgg 122392
Leu     Ile Asn Leu Ile Tyr     Cys Pro Asp Arg Asp     Pro Ile Ala Trp
20670                   20675                   20680

ctc     cag aac ccc aag ctg     acc ggt gtc aac tcg     gcc ctg aac cag 122437
Leu     Gln Asn Pro Lys Leu     Thr Gly Val Asn Ser     Ala Leu Asn Gln
20685                   20690                   20695

ttc     tac caa aag ctg ttg     cca ccg gga cgg gcg     ggt acc gcc gtt 122482
Phe     Tyr Gln Lys Leu Leu     Pro Pro Gly Arg Ala     Gly Thr Ala Val
20700                   20705                   20710

acg     ggg agc gta gcg tct     ccc gtt ccg cat gta     ggc gaa gcc atg 122527
Thr     Gly Ser Val Ala Ser     Pro Val Pro His Val     Gly Glu Ala Met
20715                   20720                   20725

gcc     acg ggg gag gcc ctc     tgg gct ctc ccc cac     gcg gcc gcg gcc 122572
Ala     Thr Gly Glu Ala Leu     Trp Ala Leu Pro His     Ala Ala Ala Ala
20730                   20735                   20740

gtg     gct atg agc cgt cga     tac gac cgg gcc caa     aaa cac ttt atc 122617
Val     Ala Met Ser Arg Arg     Tyr Asp Arg Ala Gln     Lys His Phe Ile
20745                   20750                   20755

cta     cag agt ctc cgc aga     gcc ttt gcc agc atg     gca tac ccc gag 122662
Leu     Gln Ser Leu Arg Arg     Ala Phe Ala Ser Met     Ala Tyr Pro Glu
20760                   20765                   20770

gca     acg ggc tcc agt ccg     gcg gcg cgg atc tcc     cgc ggt cac cct 122707
Ala     Thr Gly Ser Ser Pro     Ala Ala Arg Ile Ser     Arg Gly His Pro
20775                   20780                   20785

tct     cca aca acc ccg gcc     aca cag gct ccc gac     cct cag ccg tcg 122752
Ser     Pro Thr Thr Pro Ala     Thr Gln Ala Pro Asp     Pro Gln Pro Ser
20790                   20795                   20800

gcc     gcc gca cgc tct ctt     tct gtg tgt cca ccg     gat gat cgt tta 122797
Ala     Ala Ala Arg Ser Leu     Ser Val Cys Pro Pro     Asp Asp Arg Leu
20805                   20810                   20815

cga     act ccg cgc aag cgc     aag tcc cag cca gtc     gag agc aga agc 122842
Arg     Thr Pro Arg Lys Arg     Lys Ser Gln Pro Val     Glu Ser Arg Ser
20820                   20825                   20830

ctc     ctc gac aag att agg     gag aca ccc gtc gcg     gac gcc cgg gtt 122887
Leu     Leu Asp Lys Ile Arg     Glu Thr Pro Val Ala     Asp Ala Arg Val
20835                   20840                   20845

gca     gac gat cat gtg gtt     tcc aag gcc aag agg     cgg gta tcc gag 122932
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Ala     Asp Asp His Val Val     Ser Lys Ala Lys Arg     Arg Val Ser Glu
20850                   20855               20860

ccc     gtg acc atc acc tcg     ggc cct gtg gtg gat     ccc ccc gcc gta 122977
Pro     Val Thr Ile Thr Ser     Gly Pro Val Val Asp     Pro Pro Ala Val
20865                   20870               20875

ata     acg atg cca ctt gac     gga ccg gcc cca aac     ggg gga ttt cgg 123022
Ile     Thr Met Pro Leu Asp     Gly Pro Ala Pro Asn     Gly Gly Phe Arg
20880                   20885               20890

cgt     att ccc cgg ggg gcc     ctg cat acc ccg gtc     ccg tcg gac cag 123067
Arg     Ile Pro Arg Gly Ala     Leu His Thr Pro Val     Pro Ser Asp Gln
20895                   20900               20905

gct     cgc aag gcg tac tgt     acc ccc gaa acc atc     gcc cgt ctg gtc 123112
Ala     Arg Lys Ala Tyr Cys     Thr Pro Glu Thr Ile     Ala Arg Leu Val
20910                   20915               20920

gac     gac cca ttg ttt ccc     acg gcc tgg cgc cct     gcg cta agc ttt 123157
Asp     Asp Pro Leu Phe Pro     Thr Ala Trp Arg Pro     Ala Leu Ser Phe
20925                   20930               20935

gat     ccc ggc gcc ttg gcg     gaa atc gcc gct cgg     cgt ccg ggc gga 123202
Asp     Pro Gly Ala Leu Ala     Glu Ile Ala Ala Arg     Arg Pro Gly Gly
20940                   20945               20950

gga     gac cga cgg ttt ggt     cca ccc agc gga gtg     gag gcg ctg cga 123247
Gly     Asp Arg Arg Phe Gly     Pro Pro Ser Gly Val     Glu Ala Leu Arg
20955                   20960               20965

cgg     agg tgc gcc tgg atg     cgg cag atc cca gac     ccg gag gat gtg 123292
Arg     Arg Cys Ala Trp Met     Arg Gln Ile Pro Asp     Pro Glu Asp Val
20970                   20975               20980

agg     ctt ctg atc atc tac     gat ccg ttg ccc gga     gag gac atc aac 123337
Arg     Leu Leu Ile Ile Tyr     Asp Pro Leu Pro Gly     Glu Asp Ile Asn
20985                   20990               20995

ggc     ccc ctc gag agc acc     ctc gcg aca gat ccg     gga ccg tca tgg 123382
Gly     Pro Leu Glu Ser Thr     Leu Ala Thr Asp Pro     Gly Pro Ser Trp
21000                   21005               21010

agt     cca tcc cga ggg gga     ctg tct gtg gtc ctg     gca gcc ctg agt 123427
Ser     Pro Ser Arg Gly Gly     Leu Ser Val Val Leu     Ala Ala Leu Ser
21015                   21020               21025

aac     cgg ttg tgc ctg ccg     agc act cat gcc tgg     gcc ggg aac tgg 123472
Asn     Arg Leu Cys Leu Pro     Ser Thr His Ala Trp     Ala Gly Asn Trp
21030                   21035               21040

acc     ggc ccg ccg gac gtg     tcc gct ttg aac gcc     cgg ggc gtt tta 123517
Thr     Gly Pro Pro Asp Val     Ser Ala Leu Asn Ala     Arg Gly Val Leu
21045                   21050               21055

tta     ctg tcg acc cga gac     ctg gcc ttt gcc ggg     gcc gtc gag tat 123562
Leu     Leu Ser Thr Arg Asp     Leu Ala Phe Ala Gly     Ala Val Glu Tyr
21060                   21065               21070

cta     ggc tcg cgg ttg gcc     tct gcc cgg cgc cgg     ttg ctg gtg ttg 123607
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Leu    Gly Ser Arg Leu Ala    Ser Ala Arg Arg Arg    Leu Leu Val Leu
21075                         21080                  21085

gac    gcg gtg gcc ctc gag    agg tgg ccc agg gat    gga ccc gct ttg 123652
Asp    Ala Val Ala Leu Glu    Arg Trp Pro Arg Asp    Gly Pro Ala Leu
21090                         21095                  21100

tct    cag tat cac gtg tac    gtc cgg gcc ccg gcg    cga ccg gac gcc 123697
Ser    Gln Tyr His Val Tyr    Val Arg Ala Pro Ala    Arg Pro Asp Ala
21105                         21110                  21115

cag    gcc gtc gtc cga tgg    cca gac tcg gcg gtc    aca gaa gga ctc 123742
Gln    Ala Val Val Arg Trp    Pro Asp Ser Ala Val    Thr Glu Gly Leu
21120                         21125                  21130

gcc    cgg gcc gtg ttt gca    tcg tcg cgc acc ttt    ggg cca gcg agt 123787
Ala    Arg Ala Val Phe Ala    Ser Ser Arg Thr Phe    Gly Pro Ala Ser
21135                         21140                  21145

ttt    gct cgt atc gag act    gcg ttt gcc aac ctg    tac ccg ggc gaa 123832
Phe    Ala Arg Ile Glu Thr    Ala Phe Ala Asn Leu    Tyr Pro Gly Glu
21150                         21155                  21160

caa    ccc ctg tgt ttg tgc    cgc ggt ggg aac gtc    gca tac acc gtg 123877
Gln    Pro Leu Cys Leu Cys    Arg Gly Gly Asn Val    Ala Tyr Thr Val
21165                         21170                  21175

tgt    acc cgc gcg ggc ccc    aag acc cgc gtc ccc    ctg tcg ccc cgt 123922
Cys    Thr Arg Ala Gly Pro    Lys Thr Arg Val Pro    Leu Ser Pro Arg
21180                         21185                  21190

gaa    tac cgg cag tac gtg    ctg ccg ggt ttt gac    ggt tgc aag gac 123967
Glu    Tyr Arg Gln Tyr Val    Leu Pro Gly Phe Asp    Gly Cys Lys Asp
21195                         21200                  21205

ctc    gcg cga cag tct cgg    ggt ctg ggg ctc ggg    gca gcc gac ttt 124012
Leu    Ala Arg Gln Ser Arg    Gly Leu Gly Leu Gly    Ala Ala Asp Phe
21210                         21215                  21220

gtg    gac gag gcg gca cat    agc cac cgc gca gca    aac cga tgg ggc 124057
Val    Asp Glu Ala Ala His    Ser His Arg Ala Ala    Asn Arg Trp Gly
21225                         21230                  21235

ctg    ggt gcc gcg ctt cga    ccc gtc ttc ctt ccc    gag gga cgg aga 124102
Leu    Gly Ala Ala Leu Arg    Pro Val Phe Leu Pro    Glu Gly Arg Arg
21240                         21245                  21250

ccg    ggg gcc gcc ggg ccg    gag gcc ggc gac gta    ccc acc tgg gcg 124147
Pro    Gly Ala Ala Gly Pro    Glu Ala Gly Asp Val    Pro Thr Trp Ala
21255                         21260                  21265

agg    gtg ttt tgc cgc cac    gcc ctg ctg gaa ccc    gac cct gcc gca 124192
Arg    Val Phe Cys Arg His    Ala Leu Leu Glu Pro    Asp Pro Ala Ala
21270                         21275                  21280

gaa    cca ctc gtg ctt cca    ccc gtg gcc ggt cgg    tcg gtg gcg ctg 124237
Glu    Pro Leu Val Leu Pro    Pro Val Ala Gly Arg    Ser Val Ala Leu
21285                         21290                  21295

tat    gcg tcg gcg gac gag    gct cgg aat gcc ctc    ccc ccg att ccc 124282
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      Tyr   Ala Ser Ala Asp Glu   Ala Arg Asn Ala Leu   Pro Pro Ile Pro
      21300                21305               21310

      aga   gta atg tgg ccg ccc   ggt ttt ggg gcc gcg   gag acg gtg ttg  124327
      Arg   Val Met Trp Pro Pro   Gly Phe Gly Ala Ala   Glu Thr Val Leu
      21315                21320               21325

      gag   ggg agc gac gga aca   cgg ttc gtg ttc gga   cac cac ggg ggc  124372
      Glu   Gly Ser Asp Gly Thr   Arg Phe Val Phe Gly   His His Gly Gly
      21330                21335               21340

      tcg   gaa cgg ccg tca gaa   acc cag gcg ggg cga   cag cgg cgc acc  124417
      Ser   Glu Arg Pro Ser Glu   Thr Gln Ala Gly Arg   Gln Arg Arg Thr
      21345                21350               21355

      gca   gac gac aga gaa cac   gct ttg gag ctg gac   gat tgg gag gtg  124462
      Ala   Asp Asp Arg Glu His   Ala Leu Glu Leu Asp   Asp Trp Glu Val
      21360                21365               21370

      ggg   tgt gaa gac gcg tgg   gac agc gag gag ggg   ggc ggg gac gac  124507
      Gly   Cys Glu Asp Ala Trp   Asp Ser Glu Glu Gly   Gly Gly Asp Asp
      21375                21380               21385

      ggg   gac gca ccg ggg tca   tcc ttt ggg gtg agc   atc gtg tcg gtg  124552
      Gly   Asp Ala Pro Gly Ser   Ser Phe Gly Val Ser   Ile Val Ser Val
      21390                21395               21400

      gcc   ccg ggt gtg ctg cga   gac cgc cgg gtg ggt   ttg cgc ccg gcg  124597
      Ala   Pro Gly Val Leu Arg   Asp Arg Arg Val Gly   Leu Arg Pro Ala
      21405                21410               21415

      gtc   aag gtg gag ctg ttg   tcc tcg tcc tcg tcc   tcc gag gac gag  124642
      Val   Lys Val Glu Leu Leu   Ser Ser Ser Ser Ser   Ser Glu Asp Glu
      21420                21425               21430

      gac   gat gtg tgg gga ggg   cgc ggg ggg agg agc   ccc ccg cag agt  124687
      Asp   Asp Val Trp Gly Gly   Arg Gly Gly Arg Ser   Pro Pro Gln Ser
      21435                21440               21445

      cgg   ggg tga cggagtcccc tcctttctc gtgagcgcca ctggcgcgcg            124736
      Arg   Gly
      21450

      gactgtttgt tgttaataaa agcggaacgg tttttatgaa aaaagtgtct gtctgtctgt  124796

      gcgggcgggc gacgggcggg ctggtcggac ccccccccga aaataacccc ccccggttt   124856

      ctggcgcccc ggcggaccccc gggagagg                                     124884


<210>  9
<211>  238
<212>  PRT
<213>  Varicella zoster

<400>  9

Met His Val Ile Ser Glu Thr Leu Ala Tyr Gly His Val Pro Ala Phe
1                5                  10                  15
```

Ile Met Gly Ser Thr Leu Val Arg Pro Ser Leu Asn Ala Thr Ala Glu
        20   25   30

Glu Asn Pro Ala Ser Glu Thr Arg Cys Leu Leu Arg Val Leu Ala Gly
        35   40   45

Arg Thr Val Asp Leu Pro Gly Gly Gly Thr Leu His Ile Thr Cys Thr
    50   55   60

Lys Thr Tyr Val Ile Ile Gly Lys Tyr Ser Lys Pro Gly Glu Arg Leu
65   70   75   80

Ser Leu Ala Arg Leu Ile Gly Arg Ala Met Thr Pro Gly Gly Ala Arg
                85   90   95

Thr Phe Ile Ile Leu Ala Met Lys Glu Lys Arg Ser Thr Thr Leu Gly
            100   105   110

Tyr Glu Cys Gly Thr Gly Leu His Leu Leu Ala Pro Ser Met Gly Thr
        115   120   125

Phe Leu Arg Thr His Gly Leu Ser Asn Arg Asp Leu Cys Leu Trp Arg
    130   135   140

Gly Asn Ile Tyr Asp Met His Met Gln Arg Leu Met Phe Trp Glu Asn
145   150   155   160

Ile Ala Gln Asn Thr Thr Glu Thr Pro Cys Ile Thr Ser Thr Leu Thr
                165   170   175

Cys Asn Leu Thr Glu Asp Ser Gly Glu Ala Ala Leu Thr Thr Ser Asp
            180   185   190

Arg Pro Thr Leu Pro Thr Leu Thr Ala Gln Gly Arg Pro Thr Val Ser
        195   200   205

Asn Ile Arg Gly Ile Leu Lys Gly Ser Pro Arg Gln Gln Pro Val Cys
    210   215   220

His Arg Val Arg Phe Ala Glu Pro Thr Glu Gly Val Leu Met
225   230   235

<210> 10
<211> 259
<212> PRT

<213> Varicella zoster

<400> 10

Met Gln Thr Val Cys Ala Ser Leu Cys Gly Tyr Ala Arg Ile Pro Thr
1   5   10   15

Glu Glu Pro Ser Tyr Glu Glu Val Arg Val Asn Thr His Pro Gln Gly
                20   25   30

Ala Ala Leu Leu Arg Leu Gln Glu Ala Leu Thr Ala Val Asn Gly Leu
        35   40   45

Leu Pro Ala Pro Leu Thr Leu Glu Asp Val Val Ala Ser Ala Asp Asn
    50   55   60

Thr Arg Arg Leu Val Arg Ala Gln Ala Leu Ala Arg Thr Tyr Ala Ala
65   70   75   80

Cys Ser Arg Asn Ile Glu Cys Leu Lys Gln His His Phe Thr Glu Asp
                85   90   95

Asn Pro Gly Leu Asn Ala Val Val Arg Ser His Met Glu Asn Ser Lys
                100   105   110

Arg Leu Ala Asp Met Cys Leu Ala Ala Ile Thr His Leu Tyr Leu Ser
        115   120   125

Val Gly Ala Val Asp Val Thr Thr Asp Asp Ile Val Asp Gln Thr Leu
    130   135   140

Arg Met Thr Ala Glu Ser Glu Val Val Met Ser Asp Val Val Leu Leu
145   150   155   160

Glu Lys Thr Leu Gly Val Val Ala Lys Pro Gln Ala Ser Phe Asp Val
                165   170   175

Ser His Asn His Glu Leu Ser Ile Ala Lys Gly Glu Asn Val Gly Leu
                180   185   190

Lys Thr Ser Pro Ile Lys Ser Glu Ala Thr Gln Leu Ser Glu Ile Lys
        195   200   205

Pro Pro Leu Ile Glu Val Ser Asp Asn Asn Thr Ser Asn Leu Thr Lys
    210   215   220

Lys Thr Tyr Pro Thr Glu Thr Leu Gln Pro Val Leu Thr Pro Lys Gln
225   230   235   240

Thr Gln Asp Val Gln Arg Thr Thr Pro Ala Ile Lys Lys Ser His Val
                    245   250   255

Met Leu Val

<210> 11
<211> 87
<212> PRT
<213> Varicella zoster

<400> 11

Met Gly Ser Ile Thr Ala Ser Phe Ile Leu Ile Thr Met Gln Ile Leu
1   5   10   15

Phe Phe Cys Glu Asp Ser Ser Gly Glu Pro Asn Phe Ala Glu Arg Asn
                20   25   30

Phe Trp His Ala Ser Cys Ser Ala Arg Gly Val Tyr Ile Asp Gly Ser
        35   40   45

Met Ile Thr Thr Leu Phe Phe Tyr Ala Ser Leu Leu Gly Val Cys Val
    50   55   60

Ala Leu Ile Ser Leu Ala Tyr His Ala Cys Phe Arg Leu Phe Thr Arg
65   70   75   80

Ser Val Leu Arg Ser Thr Trp
                85

<210> 12
<211> 302
<212> PRT
<213> Varicella zoster

<400> 12

Met Ala Ser Ser Asp Gly Asp Arg Leu Cys Arg Ser Asn Ala Val Arg
1   5   10   15

Arg Lys Thr Thr Pro Ser Tyr Ser Gly Gln Tyr Arg Thr Ala Arg Arg
                20   25   30

Ser Val Val Val Gly Pro Pro Asp Asp Ser Asp Asp Ser Leu Gly Tyr
        35   40   45

Ile Thr Thr Val Gly Ala Asp Ser Pro Ser Pro Val Tyr Ala Asp Leu
50   55   60

Tyr Phe Glu His Lys Asn Thr Thr Pro Arg Val His Gln Pro Asn Asp
65   70   75   80

Ser Ser Gly Ser Glu Asp Asp Phe Glu Asp Ile Asp Glu Val Val Ala
                    85   90   95

Ala Phe Arg Glu Ala Arg Leu Arg His Glu Leu Val Glu Asp Ala Val
            100   105   110

Tyr Glu Asn Pro Leu Ser Val Glu Lys Pro Ser Arg Ser Phe Thr Lys
            115   120   125

Asn Ala Ala Val Lys Pro Lys Leu Glu Asp Ser Pro Lys Arg Ala Pro
    130   135   140

Pro Gly Ala Gly Ala Ile Ala Ser Gly Arg Pro Ile Ser Phe Ser Thr
145   150   155   160

Ala Pro Lys Thr Ala Thr Ser Ser Trp Cys Gly Pro Thr Pro Ser Tyr
            165   170   175

Asn Lys Arg Val Phe Cys Glu Ala Val Arg Arg Val Ala Ala Met Gln
            180   185   190

Ala Gln Lys Ala Ala Glu Ala Ala Trp Asn Ser Asn Pro Pro Arg Asn
        195   200   205

Asn Ala Glu Leu Asp Arg Leu Leu Thr Gly Ala Val Ile Arg Ile Thr
    210   215   220

Val His Glu Gly Leu Asn Leu Ile Gln Ala Ala Asn Glu Ala Asp Leu
225   230   235   240

Gly Glu Gly Ala Ser Val Ser Lys Arg Gly His Asn Arg Lys Thr Gly
                245   250   255

Asp Leu Gln Gly Gly Met Gly Asn Glu Pro Met Tyr Ala Gln Val Arg
            260   265   270

Lys Pro Lys Ser Arg Thr Asp Thr Gln Thr Thr Gly Arg Ile Thr Asn
            275   280   285

Arg Ser Arg Ala Arg Ser Ala Ser Arg Thr Asp Thr Arg Lys
    290   295   300

<210> 13
<211> 410
<212> PRT
<213> Varicella zoster

<400> 13

Met Glu Cys Asn Leu Gly Thr Glu His Pro Ser Thr Asp Thr Trp Asn
1   5   10   15

Arg Ser Lys Thr Glu Gln Ala Val Val Asp Ala Phe Asp Glu Ser Leu
            20   25   30

Phe Gly Asp Val Ala Ser Asp Ile Gly Phe Glu Thr Ser Leu Tyr Ser
        35   40   45

His Ala Val Lys Thr Ala Pro Ser Pro Pro Trp Val Ala Ser Pro Lys
    50   55   60

Ile Leu Tyr Gln Gln Leu Ile Arg Asp Leu Asp Phe Ser Glu Gly Pro
65   70   75   80

Arg Leu Leu Ser Cys Leu Glu Thr Trp Asn Glu Asp Leu Phe Ser Cys
                85   90   95

Phe Pro Ile Asn Glu Asp Leu Tyr Ser Asp Met Met Val Leu Ser Pro
            100   105   110

Asp Pro Asp Asp Val Ile Ser Thr Val Ser Thr Lys Asp His Val Glu
            115   120   125

Met Phe Asn Leu Thr Thr Arg Gly Ser Val Arg Leu Pro Ser Pro Pro
    130   135   140

Lys Gln Pro Thr Gly Leu Pro Ala Tyr Val Gln Glu Val Gln Asp Ser
145   150   155   160

Phe Thr Val Glu Leu Arg Ala Arg Glu Glu Ala Tyr Thr Lys Leu Leu
                165   170   175

Val Thr Tyr Cys Lys Ser Ile Ile Arg Tyr Leu Gln Gly Thr Ala Lys
            180   185   190

Arg Thr Thr Ile Gly Leu Asn Ile Gln Asn Pro Asp Gln Lys Ala Tyr
        195   200   205

Thr Gln Leu Arg Gln Ser Ile Leu Leu Arg Tyr Tyr Arg Glu Val Ala
        210   215   220

Ser Leu Ala Arg Leu Leu Tyr Leu His Leu Tyr Leu Thr Val Thr Arg
225   230   235   240

Glu Phe Ser Trp Arg Leu Tyr Ala Ser Gln Ser Ala His Pro Asp Val
                    245   250   255

Phe Ala Ala Leu Lys Phe Thr Trp Thr Glu Arg Arg Gln Phe Thr Cys
                260   265   270

Ala Phe His Pro Val Leu Cys Asn His Gly Ile Val Leu Leu Glu Gly
            275   280   285

Lys Pro Leu Thr Ala Ser Ala Leu Arg Glu Ile Asn Tyr Arg Arg Arg
        290   295   300

Glu Leu Gly Leu Pro Leu Val Arg Cys Gly Leu Val Glu Glu Asn Lys
305   310   315   320

Ser Pro Leu Val Gln Gln Pro Ser Phe Ser Val His Leu Pro Arg Ser
                325   330   335

Val Gly Phe Leu Thr His His Ile Lys Arg Lys Leu Asp Ala Tyr Ala
                340   345   350

Val Lys His Pro Gln Glu Pro Arg His Val Arg Ala Asp His Pro Tyr
            355   360   365

Ala Lys Val Val Glu Asn Arg Asn Tyr Gly Ser Ser Ile Glu Ala Met
        370   375   380

Ile Leu Ala Pro Pro Ser Pro Ser Glu Ile Leu Pro Gly Asp Pro Pro
385   390   395   400

Arg Pro Pro Thr Cys Gly Phe Leu Thr Arg
                405   410

<210>   14
<211>   819
<212>   PRT

<213> Varicella zoster

<400> 14

Met Gln Ser Gly His Tyr Asn Arg Arg Gln Ser Arg Arg Gln Arg Ile
1   5   10   15

Ser Ser Asn Thr Thr Asp Ser Pro Arg His Thr His Gly Thr Arg Tyr
                20   25   30

Arg Ser Thr Asn Trp Tyr Thr His Pro Pro Gln Ile Leu Ser Asn Ser
            35   40   45

Glu Thr Leu Val Ala Val Gln Glu Leu Leu Asn Ser Glu Met Asp Gln
    50   55   60

Asp Ser Ser Ser Asp Ala Ser Asp Asp Phe Pro Gly Tyr Ala Leu His
65   70   75   80

His Ser Thr Tyr Asn Gly Ser Glu Gln Asn Thr Ser Thr Ser Arg His
                85   90   95

Glu Asn Arg Ile Phe Lys Leu Thr Glu Arg Glu Ala Asn Glu Glu Ile
            100   105   110

Asn Ile Asn Thr Asp Ala Ile Asp Asp Glu Gly Glu Ala Glu Glu Gly
            115   120   125

Glu Ala Glu Glu Asp Ala Ile Asp Asp Glu Gly Glu Ala Glu Glu Gly
    130   135   140

Glu Ala Glu Glu Asp Ala Ile Asp Asp Glu Gly Glu Ala Glu Glu Gly
145   150   155   160

Glu Ala Glu Glu Asp Ala Ile Asp Asp Glu Gly Glu Ala Glu Glu Gly
                165   170   175

Glu Ala Glu Glu Gly Glu Ala Glu Glu Gly Glu Ala Glu Glu Asp Ala
                180   185   190

Ile Asp Asp Glu Gly Glu Ala Glu Glu Asp Ala Ala Glu Glu Asp Ala
                195   200   205

Ile Asp Asp Glu Gly Glu Ala Glu Glu Asp Tyr Phe Ser Val Ser Gln
    210   215   220

Val Cys Ser Arg Asp Ala Asp Glu Val Tyr Phe Thr Leu Asp Pro Glu
225   230   235   240

Ile Ser Tyr Ser Thr Asp Leu Arg Ile Ala Lys Val Met Glu Pro Ala
            245   250   255

Val Ser Lys Glu Leu Asn Val Ser Lys Arg Cys Val Glu Pro Val Thr
            260   265   270

Leu Thr Gly Ser Met Leu Ala His Asn Gly Phe Asp Glu Ser Trp Phe
            275   280   285

Ala Met Arg Glu Cys Thr Arg Arg Glu Tyr Ile Thr Val Gln Gly Leu
            290   295   300

Tyr Asp Pro Ile His Leu Arg Tyr Gln Phe Asp Thr Ser Arg Met Thr
305   310   315   320

Pro Pro Gln Ile Leu Arg Thr Ile Pro Ala Leu Pro Asn Met Thr Leu
            325   330   335

Gly Glu Leu Leu Leu Ile Phe Pro Ile Glu Phe Met Ala Gln Pro Ile
            340   345   350

Ser Ile Glu Arg Ile Leu Val Glu Asp Val Phe Leu Asp Arg Arg Ala
            355   360   365

Ser Ser Lys Thr His Lys Tyr Gly Pro Arg Trp Asn Ser Val Tyr Ala
            370   375   380

Leu Pro Tyr Asn Ala Gly Lys Met Tyr Val Gln His Ile Pro Gly Phe
385   390   395   400

Tyr Asp Val Ser Leu Arg Ala Val Gly Gln Gly Thr Ala Ile Trp His
            405   410   415

His Met Ile Leu Ser Thr Ala Ala Cys Ala Ile Ser Asn Arg Ile Ser
            420   425   430

His Gly Asp Gly Leu Gly Phe Leu Leu Asp Ala Ala Ile Arg Ile Ser
            435   440   445

Ala Asn Cys Ile Phe Leu Gly Arg Asn Asp Asn Phe Gly Val Gly Asp
            450   455   460

Pro Cys Trp Leu Glu Asp His Leu Ala Gly Leu Pro Arg Glu Ala Val
465   470   475   480

Pro Asp Val Leu Gln Val Thr Gln Leu Val Leu Pro Asn Arg Gly Pro
                    485   490   495

Thr Val Ala Ile Met Arg Gly Phe Phe Gly Ala Leu Ala Tyr Trp Pro
                500   505   510

Glu Leu Arg Ile Ala Ile Ser Glu Pro Ser Thr Ser Leu Val Arg Tyr
                515   520   525

Ala Thr Gly His Met Glu Leu Ala Glu Trp Phe Leu Phe Ser Arg Thr
                530   535   540

His Ser Leu Lys Pro Gln Phe Thr Pro Thr Glu Arg Glu Met Leu Ala
545   550   555   560

Ser Phe Phe Thr Leu Tyr Val Thr Leu Gly Gly Gly Met Leu Asn Trp
                565   570   575

Ile Cys Arg Ala Thr Ala Met Tyr Leu Ala Ala Pro Tyr His Ser Arg
                580   585   590

Ser Ala Tyr Ile Ala Val Cys Glu Ser Leu Pro Tyr Tyr Tyr Ile Pro
                595   600   605

Val Asn Ser Asp Leu Leu Cys Asp Leu Glu Val Leu Leu Leu Gly Glu
610   615   620

Val Asp Leu Pro Thr Val Cys Glu Ser Tyr Ala Thr Ile Ala His Glu
625   630   635   640

Leu Thr Gly Tyr Glu Ala Val Arg Thr Ala Ala Thr Asn Phe Met Ile
                645   650   655

Glu Phe Ala Asp Cys Tyr Lys Glu Ser Glu Thr Asp Leu Met Val Ser
                660   665   670

Ala Tyr Leu Gly Ala Val Leu Leu Leu Gln Arg Val Leu Gly His Ala
                675   680   685

Asn Leu Leu Leu Leu Leu Leu Ser Gly Ala Ala Leu Tyr Gly Gly Cys
690   695   700

Ser Ile Tyr Ile Pro Arg Gly Ile Leu Asp Ala Tyr Asn Thr Leu Met
705   710   715   720

Leu Ala Ala Ser Pro Leu Tyr Ala His Gln Thr Leu Thr Ser Phe Trp
                725   730   735

Lys Asp Arg Asp Asp Ala Met Gln Thr Leu Gly Ile Arg Pro Thr Thr
                740   745   750

Asp Val Leu Pro Lys Glu Gln Asp Arg Ile Val Gln Ala Ser Pro Ile
                755   760   765

Glu Met Asn Phe Arg Phe Val Gly Leu Glu Thr Ile Tyr Pro Arg Glu
                770   775   780

Gln Pro Ile Pro Ser Val Asp Leu Ala Glu Asn Leu Met Gln Tyr Arg
785   790   795   800

Asn Glu Ile Leu Gly Leu Asp Trp Lys Ser Val Ala Met His Leu Leu
                805   810   815

Arg Lys Tyr

<210>   15
<211>   661
<212>   PRT
<213>   Varicella zoster

<400>   15

Met Phe Ser Arg Phe Ala Arg Ser Phe Ser Ser Asp Asp Arg Thr Arg
1   5   10   15

Lys Ser Tyr Asp Gly Ser Tyr Gln Ser Phe Asn Ala Gly Glu Arg Asp
                20   25   30

Leu Pro Thr Pro Thr Arg Asp Trp Cys Ser Ile Ser Gln Arg Ile Thr
                35   40   45

Ser Glu Arg Val Arg Asp Gly Cys Leu Ile Pro Thr Pro Gly Glu Ala
        50   55   60

Leu Glu Thr Ala Val Lys Ala Leu Ser Glu Lys Thr Asp Ser Leu Thr
65   70   75   80

Ser Pro Val Leu Gln Ser Thr Glu Arg His Ser Val Leu Leu Gly Leu

His His Asn Asn Val Pro Glu Ser Leu Val Val Ser Cys Met Ser Asn
            100   105   110

Asp Val His Asp Gly Phe Met Gln Arg Tyr Met Glu Thr Ile Gln Arg
            115   120   125

Cys Leu Asp Asp Leu Lys Leu Ser Gly Asp Gly Leu Trp Trp Val Tyr
        130   135   140

Glu Asn Thr Tyr Trp Gln Tyr Leu Lys Tyr Thr Thr Gly Ala Glu Val
145   150   155   160

Pro Val Thr Ser Glu Lys Val Asn Lys Lys Ser Lys Ser Thr Val Leu
                165   170   175

Leu Phe Ser Ser Val Val Ala Asn Lys Pro Ile Ser Arg His Pro Phe
            180   185   190

Lys Ser Lys Val Ile Asn Ser Asp Tyr Arg Gly Ile Cys Gln Glu Leu
        195   200   205

Arg Glu Ala Leu Gly Ala Val Gln Lys Tyr Met Tyr Phe Met Arg Pro
210   215   220

Asp Asp Pro Thr Asn Pro Ser Pro Asp Thr Arg Ile Arg Val Gln Glu
225   230   235   240

Ile Ala Ala Tyr Thr Ala Thr Gly Tyr Gly Trp Met Leu Trp Phe Leu
            245   250   255

Asp Val Val Asp Ala Arg Val Cys Arg His Leu Lys Leu Gln Phe Arg
            260   265   270

Arg Ile Arg Gly Pro Arg Ala Ser Val Ile Pro Asp Asp Leu Leu Arg
        275   280   285

Arg His Leu Lys Thr Gly Pro Ala Val Ser Ala Gly Thr Gly Val Ala
        290   295   300

Phe Ile Leu Ala Ala Thr Thr Ala Ser Ala Leu Thr Ala Leu Leu Arg
305   310   315   320

Ile Ser Val Leu Trp Arg Lys Glu Glu Trp Arg Asp Gly Leu Asn Gly

Thr Ala Ala Ala Ile Val Ala Ala Val Glu Leu Ile Thr Leu Leu His
            340   345   350

His His Phe Gln Tyr Leu Ile Asn Met Met Leu Ile Gly Tyr Ala Cys
            355   360   365

Trp Gly Asp Gly Gly Leu Asn Asp Pro Tyr Ile Leu Lys Ala Leu Arg
            370   375   380

Ala Gln Gly Arg Phe Leu Tyr Phe Ala Gly Gln Leu Val Arg Thr Met
385   390   395   400

Ser Thr His Ser Trp Val Val Leu Glu Thr Ser Thr His Met Trp Phe
            405   410   415

Ser Arg Ala Val Ala Gln Ser Ile Leu Ala His Gly Gly Lys Pro Thr
            420   425   430

Lys Tyr Tyr Ala Gln Val Leu Ala Ala Ser Lys Arg Tyr Thr Pro Leu
            435   440   445

His Leu Arg Arg Ile Ser Glu Pro Ser Ser Val Ser Asp Gln Pro Tyr
450   455   460

Ile Arg Phe Asn Arg Leu Gly Ser Pro Ile Gly Thr Gly Ile Gly Asn
465   470   475   480

Leu Glu Cys Val Cys Leu Thr Gly Asn Tyr Leu Ser Asp Asp Val Asn
            485   490   495

Ala Ser Ser His Val Ile Asn Thr Glu Ala Pro Leu Asn Ser Ile Ala
            500   505   510

Pro Asp Thr Asn Arg Gln Arg Thr Ser Arg Val Leu Val Arg Pro Asp
            515   520   525

Thr Gly Leu Asp Val Thr Val Arg Lys Asn His Cys Leu Asp Ile Gly
            530   535   540

His Thr Asp Gly Ser Pro Val Asp Pro Thr Tyr Pro Asp His Tyr Thr
545   550   555   560

Arg Ile Lys Ala Glu Tyr Glu Gly Pro Val Arg Asp Glu Ser Asn Thr

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                565                     570                     575

Met Phe Asp Gln Arg Ser Asp Leu Arg His Ile Glu Thr Gln Ala Ser
            580                     585                     590

Leu Asn Asp His Val Tyr Glu Asn Ile Pro Pro Lys Glu Val Gly Phe
            595                     600                     605

Asn Ser Ser Ser Asp Leu Asp Val Asp Ser Leu Asn Gly Tyr Thr Ser
            610                     615                     620

Gly Asp Met His Thr Asp Asp Asp Leu Ser Pro Asp Phe Ile Pro Asn
625                     630                     635                     640

Asp Val Pro Val Arg Cys Lys Thr Thr Val Thr Phe Arg Lys Asn Thr
                645                     650                     655

Pro Lys Ser His His
            660


<210>   16
<211>   301
<212>   PRT
<213>   Varicella zoster

<400>   16

Met Gly Asp Leu Ser Cys Trp Thr Lys Val Pro Gly Phe Thr Leu Thr
1               5                   10                      15

Gly Glu Leu Gln Tyr Leu Lys Gln Val Asp Asp Ile Leu Arg Tyr Gly
            20                      25                      30

Val Arg Lys Arg Asp Arg Thr Gly Ile Gly Thr Leu Ser Leu Phe Gly
            35                      40                      45

Met Gln Ala Arg Tyr Asn Leu Arg Asn Glu Phe Pro Leu Leu Thr Thr
        50                      55                      60

Lys Arg Val Phe Trp Arg Ala Val Val Glu Glu Leu Leu Trp Phe Ile
65                      70                      75                      80

Arg Gly Ser Thr Asp Ser Lys Glu Leu Ala Ala Lys Asp Ile His Ile
                    85                      90                      95

Trp Asp Ile Tyr Gly Ser Ser Lys Phe Leu Asn Arg Asn Gly Phe His
            100                     105                     110
```

Lys Arg His Thr Gly Asp Leu Gly Pro Ile Tyr Gly Phe Gln Trp Arg
            115   120   125

His Phe Gly Ala Glu Tyr Lys Asp Cys Gln Ser Asn Tyr Leu Gln Gln
            130   135   140

Gly Ile Asp Gln Leu Gln Thr Val Ile Asp Thr Ile Lys Thr Asn Pro
145   150   155   160

Glu Ser Arg Arg Met Ile Ile Ser Ser Trp Asn Pro Lys Asp Ile Pro
                165   170   175

Leu Met Val Leu Pro Pro Cys His Thr Leu Cys Gln Phe Tyr Val Ala
                180   185   190

Asn Gly Glu Leu Ser Cys Gln Val Tyr Gln Arg Ser Gly Asp Met Gly
            195   200   205

Leu Gly Val Pro Phe Asn Ile Ala Gly Tyr Ala Leu Leu Thr Tyr Ile
            210   215   220

Val Ala His Val Thr Gly Leu Lys Thr Gly Asp Leu Ile His Thr Met
225   230   235   240

Gly Asp Ala His Ile Tyr Leu Asn His Ile Asp Ala Leu Lys Val Gln
                245   250   255

Leu Ala Arg Ser Pro Lys Pro Phe Pro Cys Leu Lys Ile Ile Arg Asn
            260   265   270

Val Thr Asp Ile Asn Asp Phe Lys Trp Asp Asp Phe Gln Leu Asp Gly
            275   280   285

Tyr Asn Pro His Pro Pro Leu Lys Met Glu Met Ala Leu
290   295   300

<210> 17
<211> 455
<212> PRT
<213> Varicella zoster

<400> 17

Met Gly Leu Phe Gly Leu Thr Arg Phe Ile His Glu His Lys Leu Val
1   5   10   15

Lys Pro Ser Ile Ile Ser Thr Pro Pro Gly Val Leu Thr Pro Val Ala
        20   25   30

Val Asp Val Trp Asn Val Met Tyr Thr Leu Leu Glu Arg Leu Tyr Pro
        35   40   45

Val Gly Lys Arg Glu Asn Leu His Gly Pro Ser Val Thr Ile His Cys
        50   55   60

Leu Gly Val Leu Leu Arg Leu Leu Thr Gln Arg Ser Tyr Tyr Pro Ile
65   70   75   80

Phe Val Leu Glu Arg Cys Thr Asp Gly Pro Leu Ser Arg Gly Ala Lys
                85   90   95

Ala Ile Met Ser Arg Ala Met Asn His Asp Glu Arg Gly Thr Ser Asp
                100   105   110

Leu Thr Arg Val Leu Leu Ser Ser Asn Thr Ser Cys Ser Ile Lys Tyr
        115   120   125

Asn Lys Thr Ser Glu Thr Tyr Asp Ser Val Phe Arg Asn Ser Ser Thr
        130   135   140

Ser Cys Ile Pro Ser Glu Glu Asn Lys Ser Gln Asp Met Phe Leu Asp
145   150   155   160

Gly Cys Pro Arg Gln Thr Asp Lys Thr Ile Cys Leu Arg Asp Gln Asn
                165   170   175

Val Cys Ser Leu Thr Ser Thr Met Pro Ser Arg Gly His Pro Asn His
                180   185   190

Arg Leu Tyr His Lys Leu Cys Ala Ser Leu Ile Arg Trp Met Gly Tyr
        195   200   205

Ala Tyr Val Glu Ala Val Asp Ile Glu Ala Asp Glu Ala Cys Ala Asn
        210   215   220

Leu Phe His Thr Arg Thr Val Ala Leu Val Tyr Thr Thr Asp Thr Asp
225   230   235   240

Leu Leu Phe Met Gly Cys Asp Ile Leu Leu Asp Ala Ile Pro Met Phe
                245   250   255

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Ala Pro Val Val Arg Cys Arg Asp Leu Leu Gln Tyr Leu Gly Ile Thr
            260                 265             270

Tyr Pro Glu Phe Leu Val Ala Phe Val Arg Cys Gln Thr Asp Leu His
            275             280                 285

Thr Ser Asp Asn Leu Lys Ser Val Gln Gln Val Ile Gln Asp Thr Gly
            290             295             300

Leu Lys Val Pro His Gln Met Asp Thr Ser Thr Arg Ser Pro Thr Tyr
305             310             315                 320

Asp Ser Trp Arg His Gly Glu Val Phe Lys Ser Leu Thr Val Ala Thr
                325             330             335

Ser Gly Lys Thr Glu Asn Gly Val Ser Val Ser Lys Tyr Ala Ser Asn
            340             345             350

Arg Ser Glu Val Thr Val Asp Ala Ser Trp Ala Leu Asn Leu Leu Pro
            355             360             365

Pro Ser Ser Ser Pro Leu Asp Asn Leu Glu Arg Ala Phe Val Glu His
    370             375             380

Ile Ile Ala Val Val Thr Pro Leu Thr Arg Gly Arg Leu Lys Leu Met
385             390             395             400

Lys Arg Val Asn Ile Met Gln Asn Thr Ala Asp Pro Tyr Met Val Ile
                405             410             415

Asn Thr Leu Tyr His Asn Leu Lys Gly Glu Lys Met Ala Arg Gln Tyr
            420             425             430

Ala Arg Ile Phe Lys Gln Phe Ile Pro Thr Pro Leu Pro Leu Asn Thr
            435             440             445

Val Leu Thr Lys Tyr Trp Asn
    450             455


<210>  18
<211>  1038
<212>  PRT
<213>  Varicella zoster

<400>  18
```

Met Glu Glu Pro Ile Cys Tyr Asp Thr Gln Lys Leu Leu Asp Asp Leu
1   5   10   15

Ser Asn Leu Lys Val Gln Glu Ala Asp Asn Glu Arg Pro Trp Ser Pro
              20   25   30

Glu Lys Thr Glu Ile Ala Arg Val Lys Val Val Lys Phe Leu Arg Ser
              35   40   45

Thr Gln Lys Ile Pro Ala Lys His Phe Ile Gln Ile Trp Glu Pro Leu
        50   55   60

His Ser Asn Ile Cys Phe Val Tyr Ser Asn Thr Phe Leu Ala Glu Ala
65   70   75   80

Ala Phe Thr Ala Glu Asn Leu Pro Gly Leu Leu Phe Trp Arg Leu Asp
              85   90   95

Leu Asp Trp Thr Ile Glu Glu Pro Gly Asn Ser Leu Lys Ile Leu Thr
              100   105   110

Gln Leu Ser Ser Val Val Gln Asp Ser Glu Thr Leu His Arg Leu Ser
        115   120   125

Ala Asn Lys Leu Arg Thr Ser Ser Lys Phe Gly Pro Val Ser Ile His
        130   135   140

Phe Ile Ile Thr Asp Trp Ile Asn Met Tyr Glu Val Ala Leu Lys Asp
145   150   155   160

Ala Thr Thr Ala Ile Glu Ser Pro Phe Thr His Ala Arg Ile Gly Met
              165   170   175

Leu Glu Ser Ala Ile Ala Ala Leu Thr Gln His Lys Phe Ala Ile Ile
              180   185   190

Tyr Asp Met Pro Phe Val Gln Glu Gly Ile Arg Val Leu Thr Gln Tyr
              195   200   205

Ala Gly Trp Leu Leu Pro Phe Asn Val Met Trp Asn Gln Ile Gln Asn
              210   215   220

Ser Ser Leu Thr Pro Leu Thr Arg Ala Leu Phe Ile Ile Cys Met Ile
225   230   235   240

Asp Glu Tyr Leu Thr Glu Thr Pro Val His Ser Ile Ser Glu Leu Phe
            245   250   255

Ala Asp Thr Val Asn Leu Ile Lys Asp Glu Ala Phe Val Ser Ile Glu
            260   265   270

Glu Ala Val Thr Asn Pro Arg Thr Val His Glu Ser Arg Ile Ser Ser
            275   280   285

Ala Leu Ala Tyr Arg Asp Pro Tyr Val Phe Glu Thr Ser Pro Gly Met
            290   295   300

Leu Ala Arg Arg Leu Arg Leu Asp Asn Gly Ile Trp Glu Ser Asn Leu
305   310   315   320

Leu Ser Leu Ser Thr Pro Gly Ile His Ile Glu Ala Leu Leu His Leu
            325   330   335

Leu Asn Ser Asp Pro Glu Ala Glu Thr Thr Ser Gly Ser Asn Val Ala
            340   345   350

Glu His Thr Arg Gly Ile Trp Glu Lys Val Gln Ala Ser Thr Ser Pro
            355   360   365

Ser Met Leu Ile Ser Thr Leu Ala Glu Ser Gly Phe Thr Arg Phe Ser
370   375   380

Cys Lys Leu Leu Arg Arg Phe Ile Ala His His Thr Leu Ala Gly Phe
385   390   395   400

Ile His Gly Ser Val Val Ala Asp Glu His Ile Thr Asp Phe Gln Gln
            405   410   415

Thr Leu Gly Cys Leu Ala Leu Val Gly Gly Leu Ala Tyr Gln Leu Val
            420   425   430

Glu Thr Tyr Ala Pro Thr Thr Glu Tyr Val Leu Thr Tyr Thr Arg Thr
            435   440   445

Val Asn Glu Thr Glu Lys Arg Tyr Glu Thr Leu Leu Pro Ala Leu Gly
            450   455   460

Leu Pro Pro Gly Gly Leu Gly Gln Ile Met Arg Arg Cys Phe Ala Pro
465   470   475   480

Arg Pro Leu Ile Glu Ser Ile Gln Ala Thr Arg Val Ile Leu Leu Asn
            485   490   495

Glu Ile Ser His Ala Glu Ala Arg Glu Thr Thr Tyr Phe Lys Gln Thr
            500   505   510

His Asn Gln Ser Ser Gly Ala Leu Leu Pro Gln Ala Gly Gln Ser Ala
            515   520   525

Val Arg Glu Ala Val Leu Thr Trp Phe Asp Leu Arg Met Asp Ser Arg
            530   535   540

Trp Gly Ile Thr Pro Pro Val Asp Val Gly Met Thr Pro Pro Ile Cys
545   550   555   560

Val Asp Pro Pro Ala Thr Gly Leu Glu Ala Val Met Ile Thr Glu Ala
                565   570   575

Leu Lys Ile Ala Tyr Pro Thr Glu Tyr Asn Arg Ser Ser Val Phe Val
                580   585   590

Glu Pro Ser Phe Val Pro Tyr Ile Ile Ala Thr Ser Thr Leu Asp Ala
                595   600   605

Leu Ser Ala Thr Ile Ala Leu Ser Phe Asp Thr Arg Gly Ile Gln Gln
            610   615   620

Ala Leu Ser Ile Leu Gln Trp Ala Arg Asp Tyr Gly Ser Gly Thr Val
625   630   635   640

Pro Asn Ala Asp Gly Tyr Arg Thr Lys Leu Ser Ala Leu Ile Thr Ile
                645   650   655

Leu Glu Pro Phe Thr Arg Thr His Pro Pro Val Leu Leu Pro Ser His
                660   665   670

Val Ser Thr Ile Asp Ser Leu Ile Cys Glu Leu His Arg Thr Val Gly
            675   680   685

Ile Ala Val Asp Leu Leu Pro Gln His Val Arg Pro Leu Val Pro Asp
            690   695   700

Arg Pro Ser Ile Thr Asn Ser Val Phe Leu Ala Thr Leu Tyr Tyr Asp
705   710   715   720

Glu Leu Tyr Gly Arg Trp Thr Arg Leu Asp Lys Thr Ser Gln Ala Leu
                725   730   735

Val Glu Asn Phe Thr Ser Asn Ala Leu Val Val Ser Arg Tyr Met Leu
                740   745   750

Met Leu Gln Lys Phe Phe Ala Cys Arg Phe Tyr Pro Thr Pro Asp Leu
                755   760   765

Gln Ala Val Gly Ile Cys Asn Pro Lys Val Glu Arg Asp Glu Gln Phe
                770   775   780

Gly Val Trp Arg Leu Asn Asp Leu Ala Asp Ala Val Gly His Ile Val
785   790   795   800

Gly Thr Ile Gln Gly Ile Arg Thr Gln Met Arg Val Gly Ile Ser Ser
                805   810   815

Leu Arg Thr Ile Met Ala Asp Ala Ser Ser Ala Leu Arg Glu Cys Glu
                820   825   830

Asn Leu Met Thr Lys Thr Ser Thr Ser Ala Ile Gly Pro Leu Phe Ser
                835   840   845

Thr Met Ala Ser Arg Tyr Ala Arg Phe Thr Gln Asp Gln Met Asp Ile
850   855   860

Leu Met Arg Val Asp Lys Leu Thr Thr Gly Glu Asn Ile Pro Gly Leu
865   870   875   880

Ala Asn Val Glu Ile Phe Leu Asn Arg Trp Glu Arg Ile Ala Thr Ala
                885   890   895

Cys Arg His Ala Thr Ala Val Pro Ser Ala Glu Ser Ile Ala Thr Val
                900   905   910

Cys Asn Glu Leu Arg Arg Gly Leu Lys Asn Ile Gln Glu Asp Arg Val
                915   920   925

Asn Ala Pro Thr Ser Tyr Met Ser His Ala Arg Asn Leu Glu Asp His
                930   935   940

Lys Ala Ala Val Ser Phe Val Met Asp Ser Arg Gln Gln Phe Ile Val
945   950   955   960

Asp Ser Gly Pro Gln Met Gly Ala Val Leu Thr Ser Gln Cys Asn Ile
            965   970   975

Gly Thr Trp Glu Asn Val Asn Ala Thr Phe Leu His Asp Asn Val Lys
            980   985   990

Ile Thr Thr Thr Val Arg Asp Val Ile Ser Glu Ala Pro Thr Leu Ile
            995   1000   1005

Ile Gly Gln Arg Trp Leu Arg Pro Asp Glu Ile Leu Ser Asn Val
        1010   1015   1020

Asp Leu Arg Leu Gly Val Pro Gly Asn Thr Ser Gly Ser Asp Pro
        1025   1030   1035

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<213> Varicella zoster

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Met Asp Ile Ile Pro Pro Ile Ala Val Thr Val Ala Gly Val Gly Ser
1   5   10   15

Arg Asn Gln Phe Asp Gly Ala Leu Gly Pro Ala Ser Gly Leu Ser Cys
            20   25   30

Leu Arg Thr Ser Leu Ser Phe Leu His Met Thr Tyr Ala His Gly Ile
        35   40   45

Asn Ala Thr Leu Ser Ser Asp Met Ile Asp Gly Cys Leu Gln Glu Gly
        50   55   60

Ala Ala Trp Thr Thr Asp Leu Ser Asn Met Gly Arg Gly Val Pro Asp
65   70   75   80

Met Cys Ala Leu Val Asp Leu Pro Asn Arg Ile Ser Tyr Ile Lys Leu
            85   90   95

Gly Asp Thr Thr Ser Thr Cys Cys Val Leu Ser Arg Ile Tyr Gly Asp
            100   105   110

Ser His Phe Phe Thr Val Pro Asp Glu Gly Phe Met Cys Thr Gln Ile
        115   120   125

Pro Ala Arg Ala Phe Phe Asp Asp Val Trp Met Gly Arg Glu Glu Ser

Tyr Thr Ile Ile Thr Val Asp Ser Thr Gly Met Ala Ile Tyr Arg Gln
145   150   155   160

Gly Asn Ile Ser Phe Ile Phe Asp Pro His Gly His Gly Thr Ile Gly
                        165   170   175

Gln Ala Val Val Val Arg Val Asn Thr Thr Asp Val Tyr Ser Tyr Ile
                        180   185   190

Ala Ser Glu Tyr Thr His Arg Pro Asp Asn Val Glu Ser Gln Trp Ala
                        195   200   205

Ala Ala Leu Val Phe Phe Val Thr Ala Asn Asp Gly Pro Val Ser Glu
                        210   215   220

Glu Ala Leu Ser Ser Ala Val Thr Leu Ile Tyr Gly Ser Cys Asp Thr
225   230   235   240

Tyr Phe Thr Asp Glu Gln Tyr Cys Glu Lys Leu Val Thr Ala Gln His
                        245   250   255

Pro Leu Leu Leu Ser Pro Pro Asn Ser Thr Thr Ile Val Leu Asn Lys
                        260   265   270

Ser Ser Ile Val Pro Leu His Gln Asn Val Gly Glu Ser Val Ser Leu
                        275   280   285

Glu Ala Thr Leu His Ser Thr Leu Thr Asn Thr Val Ala Leu Asp Pro
                        290   295   300

Arg Cys Ser Tyr Ser Glu Val Asp Pro Trp His Ala Val Leu Glu Thr
305   310   315   320

Thr Ser Thr Gly Ser Gly Val Leu Asp Cys Arg Arg Arg Arg Arg Pro
                        325   330   335

Ser Trp Thr Pro Pro Ser Ser Glu Glu Asn Leu Ala Cys Ile Asp Asp
                        340   345   350

Gly Leu Val Asn Asn Thr His Ser Thr Asp Asn Leu His Lys Pro Ala
                        355   360   365

Lys Lys Val Leu Lys Phe Lys Pro Thr Val Asp Val Pro Asp Lys Thr

370   375   380

Gln Val Ala His Val Leu Pro Arg Leu Arg Glu Val Ala Asn Thr Pro
385   390   395   400

Asp Val Val Leu Asn Val Ser Asn Val Asp Thr Pro Glu Ser Ser Pro
                        405   410   415

Thr Phe Ser Arg Asn Met Asn Val Gly Ser Ser Leu Lys Asp Arg Lys
                        420   425   430

Pro Phe Leu Phe Glu Gln Ser Gly Asp Val Asn Met Val Val Glu Lys
                        435   440   445

Leu Leu Gln His Gly His Glu Ile Ser Asn Gly Tyr Val Gln Asn Ala
            450   455   460

Val Gly Thr Leu Asp Thr Val Ile Thr Gly His Thr Asn Val Pro Ile
465   470   475   480

Trp Val Thr Arg Pro Leu Val Met Pro Asp Glu Lys Asp Pro Leu Glu
                        485   490   495

Leu Phe Ile Asn Leu Thr Ile Leu Arg Leu Thr Gly Phe Val Val Glu
                        500   505   510

Asn Gly Thr Arg Thr His His Gly Ala Thr Ser Val Val Ser Asp Phe
                        515   520   525

Ile Gly Pro Leu Gly Glu Ile Leu Thr Gly Phe Pro Ser Ala Ala Glu
            530   535   540

Leu Ile Arg Val Thr Ser Leu Ile Leu Thr Asn Met Pro Gly Ala Glu
545   550   555   560

Tyr Ala Ile Lys Thr Val Leu Arg Lys Lys Cys Thr Ile Gly Met Leu
                        565   570   575

Ile Ile Ala Lys Phe Gly Leu Val Ala Met Arg Val Gln Asp Thr Thr
                        580   585   590

Gly Ala Leu His Ala Glu Leu Asp Val Leu Glu Ala Asp Leu Gly Gly
                        595   600   605

Ser Ser Pro Ile Asp Leu Tyr Ser Arg Leu Ser Thr Gly Leu Ile Ser

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                 610                      615                      620


Ile Leu Asn Ser Pro Ile Ile Ser His Pro Gly Leu Phe Ala Glu Leu
625                     630                     635                     640


Ile Pro Thr Arg Thr Gly Ser Leu Ser Glu Arg Ile Arg Leu Leu Cys
                    645                     650                     655


Glu Leu Val Ser Ala Arg Glu Thr Arg Tyr Met Arg Glu His Thr Ala
                    660                     665                     670


Leu Val Ser Ser Val Lys Ala Leu Glu Asn Ala Leu Arg Ser Thr Arg
                    675                     680                     685


Asn Lys Ile Asp Ala Ile Gln Ile Pro Glu Val Pro Gln Glu Pro Pro
                    690                     695                     700


Glu Glu Thr Asp Ile Pro Pro Glu Glu Leu Ile Arg Arg Val Tyr Glu
705                     710                     715                     720


Ile Arg Ser Glu Val Thr Met Leu Leu Thr Ser Ala Val Thr Glu Tyr
                    725                     730                     735


Phe Thr Arg Gly Val Leu Tyr Ser Thr Arg Ala Leu Ile Ala Glu Gln
                    740                     745                     750


Ser Pro Arg Arg Phe Arg Val Ala Thr Ala Ser Thr Ala Pro Ile Gln
                    755                     760                     765


Arg Leu Leu Asp Ser Leu Pro Glu Phe Asp Ala Lys Leu Thr Ala Ile
                    770                     775                     780


Ile Ser Ser Leu Ser Ile His Pro Pro Pro Glu Thr Ile Gln Asn Leu
785                     790                     795                     800


Pro Val Val Ser Leu Leu Lys Glu Leu Ile Lys Glu Gly Glu Asp Leu
                    805                     810                     815


Asn Thr Asp Thr Ala Leu Val Ser Trp Leu Ser Val Val Gly Glu Ala
                    820                     825                     830


Gln Thr Ala Gly Tyr Leu Ser Arg Arg Glu Phe Asp Glu Leu Ser Arg
                    835                     840                     845


Thr Ile Lys Thr Ile Asn Thr Arg Ala Thr Gln Arg Ala Ser Ala Glu
```

Ala Glu Leu Ser Cys Phe Asn Thr Leu Ser Ala Ala Val Asp Gln Ala
865   870   875   880

Val Lys Asp Tyr Glu Thr Tyr Asn Asn Gly Glu Val Lys Tyr Pro Glu
                    885   890   895

Ile Thr Arg Asp Asp Leu Leu Ala Thr Ile Val Arg Ala Thr Asp Asp
                    900   905   910

Leu Val Arg Gln Ile Lys Ile Leu Ser Asp Pro Met Ile Gln Ser Gly
                    915   920   925

Leu Gln Pro Ser Ile Lys Arg Arg Leu Glu Thr Arg Leu Lys Glu Val
                    930   935   940

Gln Thr Tyr Ala Asn Glu Ala Arg Thr Thr Gln Asp Thr Ile Lys Ser
945   950   955   960

Arg Lys Gln Ala Ala Tyr Asn Lys Leu Gly Gly Leu Leu Arg Pro Val
                    965   970   975

Thr Gly Phe Val Gly Leu Arg Ala Ala Val Asp Leu Leu Pro Glu Leu
                    980   985   990

Ala Ser Glu Leu Asp Val Gln Gly Ala Leu Val Asn Leu Arg Thr Lys
                    995   1000   1005

Val Leu Glu Ala Pro Val Glu Ile Arg Ser Gln Leu Thr Gly Asp
    1010   1015   1020

Phe Trp Ala Leu Phe Asn Gln Tyr Arg Asp Ile Leu Glu His Pro
    1025   1030   1035

Gly Asn Ala Arg Thr Ser Val Leu Gly Gly Leu Gly Ala Cys Phe
    1040   1045   1050

Thr Ala Ile Ile Glu Ile Val Pro Ile Pro Thr Glu Tyr Arg Pro
    1055   1060   1065

Ser Leu Leu Ala Phe Phe Gly Asp Val Ala Asp Val Leu Ala Ser
    1070   1075   1080

Asp Ile Ala Thr Val Ser Thr Asn Pro Glu Ser Glu Ser Ala Ile

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     1085                    1090                    1095


Asn Ala  Val Val Ala Thr Leu  Ser Lys Ala Thr Leu  Val Ser Ser
     1100                    1105                    1110


Thr Val  Pro Ala Leu Ser Phe  Val Leu Ser Leu Tyr  Lys Lys Tyr
     1115                    1120                    1125


Gln Ala  Leu Gln Gln Glu Ile  Thr Asn Thr His Lys  Leu Thr Glu
     1130                    1135                    1140


Leu Gln  Lys Gln Leu Gly Asp  Asp Phe Ser Thr Leu  Ala Val Ser
     1145                    1150                    1155


Ser Gly  His Leu Lys Phe Ile  Ser Ser Ser Asn Val  Asp Asp Tyr
     1160                    1165                    1170


Glu Ile  Asn Asp Ala Ile Leu  Ser Ile Gln Thr Asn  Val His Ala
     1175                    1180                    1185


Leu Met  Asp Thr Val Lys Leu  Val Glu Val Glu Leu  Gln Lys Leu
     1190                    1195                    1200


Pro Pro  His Cys Ile Ala Gly  Thr Ser Thr Leu Ser  Arg Val Val
     1205                    1210                    1215


Lys Asp  Leu His Lys Leu Val  Thr Met Ala His Glu  Lys Lys Glu
     1220                    1225                    1230


Gln Ala  Lys Val Leu Ile Thr  Asp Cys Glu Arg Ala  His Lys Gln
     1235                    1240                    1245


Gln Thr  Thr Arg Val Leu Tyr  Glu Arg Trp Thr Arg  Asp Ile Ile
     1250                    1255                    1260


Ala Cys  Leu Glu Ala Met Glu  Thr Arg His Ile Phe  Asn Gly Thr
     1265                    1270                    1275


Glu Leu  Ala Arg Leu Arg Asp  Met Ala Ala Ala Gly  Gly Phe Asp
     1280                    1285                    1290


Ile His  Ala Val Tyr Pro Gln  Ala Arg Gln Val Val  Ala Ala Cys
     1295                    1300                    1305


Glu Thr  Thr Ala Val Thr Ala  Leu Asp Thr Val Phe  Arg His Asn
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     1310                      1315                      1320

Pro Tyr  Thr Pro Glu Asn Thr  Asn Ile Pro Pro Pro  Leu Ala Leu
     1325                      1330                      1335

Leu Arg  Gly Leu Thr Trp Phe  Asp Asp Phe Ser Ile  Thr Ala Pro
     1340                      1345                      1350

Val Phe  Thr Val Met Phe Pro  Gly Val Ser Ile Glu  Gly Leu Leu
     1355                      1360                      1365

Leu Leu  Met Arg Ile Arg Ala  Val Val Leu Leu Ser  Ala Asp Thr
     1370                      1375                      1380

Ser Ile  Asn Gly Ile Pro Asn  Tyr Arg Asp Met Ile  Leu Arg Thr
     1385                      1390                      1395

Ser Gly  Asp Leu Leu Gln Ile  Pro Ala Leu Ala Gly  Tyr Val Asp
     1400                      1405                      1410

Phe Tyr  Thr Arg Ser Tyr Asp  Gln Phe Ile Thr Glu  Ser Val Thr
     1415                      1420                      1425

Leu Ser  Glu Leu Arg Ala Asp  Ile Arg Gln Ala Ala  Gly Ala Lys
     1430                      1435                      1440

Leu Thr  Glu Ala Asn Lys Ala  Leu Glu Glu Val Thr  His Val Arg
     1445                      1450                      1455

Ala His  Glu Thr Ala Lys Leu  Ala Leu Lys Glu Gly  Val Phe Ile
     1460                      1465                      1470

Thr Leu  Pro Ser Glu Gly Leu  Leu Ile Arg Ala Ile  Glu Tyr Phe
     1475                      1480                      1485

Thr Thr  Phe Asp His Lys Arg  Phe Ile Gly Thr Ala  Tyr Glu Arg
     1490                      1495                      1500

Val Leu  Gln Thr Met Val Asp  Arg Asp Leu Lys Glu  Ala Asn Ala
     1505                      1510                      1515

Glu Leu  Ala Gln Phe Arg Met  Val Cys Gln Ala Thr  Lys Asn Arg
     1520                      1525                      1530

Ala Ile  Gln Ile Leu Gln Asn  Ile Val Asp Thr Ala  Asn Ala Thr
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        1535                    1540                    1545

Glu Gln  Gln Glu Asp Val Asp  Phe Thr Asn Leu Lys  Thr Leu Leu
        1550                    1555                    1560

Lys Leu  Thr Pro Pro Pro Lys  Thr Ile Ala Leu Ala  Ile Asp Arg
        1565                    1570                    1575

Ser Thr  Ser Val Gln Asp Ile  Val Thr Gln Phe Ala  Leu Leu Leu
        1580                    1585                    1590

Gly Arg  Leu Glu Glu Glu Thr  Gly Thr Leu Asp Ile  Gln Ala Val
        1595                    1600                    1605

Asp Trp  Met Tyr Gln Ala Arg  Asn Ile Ile Asp Ser  His Pro Leu
        1610                    1615                    1620

Ser Val  Arg Ile Asp Gly Thr  Gly Pro Leu His Thr  Tyr Lys Asp
        1625                    1630                    1635

Arg Val  Asp Lys Leu Tyr Ala  Leu Arg Thr Lys Leu  Asp Leu Leu
        1640                    1645                    1650

Arg Arg  Arg Ile Glu Thr Gly  Glu Val Thr Trp Asp  Asp Ala Trp
        1655                    1660                    1665

Thr Thr  Phe Lys Arg Glu Thr  Gly Asp Met Leu Ala  Ser Gly Asp
        1670                    1675                    1680

Thr Tyr  Ala Thr Ser Val Asp  Ser Ile Lys Ala Leu  Gln Ala Ser
        1685                    1690                    1695

Ala Ser  Val Val Asp Met Leu  Cys Ser Glu Pro Glu  Phe Phe Leu
        1700                    1705                    1710

Leu Pro  Val Glu Thr Lys Asn  Arg Leu Gln Lys Lys  Gln Gln Glu
        1715                    1720                    1725

Arg Lys  Thr Ala Leu Asp Val  Val Leu Gln Lys Gln  Arg Gln Phe
        1730                    1735                    1740

Glu Glu  Thr Ala Ser Arg Leu  Arg Ala Leu Ile Glu  Arg Ile Pro
        1745                    1750                    1755

Thr Glu  Ser Asp His Asp Val  Leu Arg Met Leu Leu  Arg Asp Phe
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         1760                   1765                   1770
Asp Gln  Phe Thr His Leu Pro  Ile Trp Ile Lys Thr  Gln Tyr Met
         1775                   1780                   1785

Thr Phe  Arg Asn Leu Leu Met  Val Arg Leu Gly Leu  Tyr Ala Ser
         1790                   1795                   1800

Tyr Ala  Glu Ile Phe Pro Pro  Ala Ser Pro Asn Gly  Val Phe Ala
         1805                   1810                   1815

Pro Ile  Pro Ala Met Ser Gly  Val Cys Leu Glu Asp  Gln Ser Arg
         1820                   1825                   1830

Cys Ile  Arg Ala Arg Val Ala  Ala Phe Met Gly Glu  Ala Ser Val
         1835                   1840                   1845

Val Gln  Thr Phe Arg Glu Ala  Arg Ser Ser Ile Asp  Ala Leu Phe
         1850                   1855                   1860

Gly Lys  Asn Leu Thr Phe Tyr  Leu Asp Thr Asp Gly  Val Pro Leu
         1865                   1870                   1875

Arg Tyr  Arg Val Cys Tyr Lys  Ser Val Gly Val Lys  Leu Gly Thr
         1880                   1885                   1890

Met Leu  Cys Ser Gln Gly Gly  Leu Ser Leu Arg Pro  Ala Leu Pro
         1895                   1900                   1905

Asp Glu  Gly Ile Val Glu Glu  Thr Thr Leu Ser Ala  Leu Arg Val
         1910                   1915                   1920

Ala Asn  Glu Val Asn Glu Leu  Arg Ile Glu Tyr Glu  Ser Ala Ile
         1925                   1930                   1935

Lys Ser  Gly Phe Ser Ala Phe  Ser Thr Phe Val Arg  His Arg His
         1940                   1945                   1950

Ala Glu  Trp Gly Lys Thr Asn  Ala Arg Arg Ala Ile  Ala Glu Ile
         1955                   1960                   1965

Tyr Ala  Gly Leu Ile Thr Thr  Thr Leu Thr Arg Gln  Tyr Gly Val
         1970                   1975                   1980

His Trp  Asp Lys Leu Ile Tyr  Ser Phe Glu Lys His  His Leu Thr
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     1985                     1990                     1995


Ser Val  Met Gly Asn Gly Leu  Thr Lys Pro Ile Gln  Arg Arg Gly
    2000             2005             2010

Asp Val  Arg Val Leu Glu Leu  Thr Leu Ser Asp Ile  Val Thr Ile
    2015             2020             2025

Leu Val  Ala Thr Thr Pro Val  His Leu Leu Asn Phe  Ala Arg Leu
    2030             2035             2040

Asp Leu  Ile Lys Gln His Glu  Tyr Met Ala Arg Thr  Leu Arg Pro
    2045             2050             2055

Val Ile  Glu Ala Ala Phe Arg  Gly Arg Leu Leu Val  Arg Ser Leu
    2060             2065             2070

Asp Gly  Asp Pro Lys Gly Asn  Ala Arg Ala Phe Phe  Asn Ala Ala
    2075             2080             2085

Pro Ser  Lys His Lys Leu Pro  Leu Ala Leu Gly Ser  Asn Gln Asp
    2090             2095             2100

Pro Thr  Gly Gly Arg Ile Phe  Ala Phe Arg Met Ala  Asp Trp Lys
    2105             2110             2115

Leu Val  Lys Met Pro Gln Lys  Ile Thr Asp Pro Phe  Ala Pro Trp
    2120             2125             2130

Gln Leu  Ser Pro Pro Pro Gly  Val Lys Ala Asn Val  Asp Ala Val
    2135             2140             2145

Thr Arg  Ile Met Ala Thr Asp  Arg Leu Ala Thr Ile  Thr Val Leu
    2150             2155             2160

Gly Arg  Met Cys Leu Pro Pro  Ile Ser Leu Val Ser  Met Trp Asn
    2165             2170             2175

Thr Leu  Gln Pro Glu Glu Phe  Ala Tyr Arg Thr Gln  Asp Asp Val
    2180             2185             2190

Asp Ile  Ile Val Asp Ala Arg  Leu Asp Leu Ser Ser  Thr Leu Asn
    2195             2200             2205

Ala Arg  Phe Asp Thr Ala Pro  Ser Asn Thr Thr Leu  Glu Trp Asn
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         2210                    2215                    2220


Thr Asp  Arg Lys Val Ile Thr  Asp Ala Tyr Ile Gln  Thr Gly Ala
         2225                    2230                    2235


Thr Thr  Val Phe Thr Val Thr  Gly Ala Ala Pro Thr  His Val Ser
         2240                    2245                    2250


Asn Val  Thr Ala Phe Asp Ile  Ala Thr Thr Ala Ile  Leu Phe Gly
         2255                    2260                    2265


Ala Pro  Leu Val Ile Ala Met  Glu Leu Thr Ser Val  Phe Ser Gln
         2270                    2275                    2280


Asn Ser  Gly Leu Thr Leu Gly  Leu Lys Leu Phe Asp  Ser Arg His
         2285                    2290                    2295


Met Ala  Thr Asp Ser Gly Ile  Ser Ser Ala Val Ser  Pro Asp Ile
         2300                    2305                    2310


Val Ser  Trp Gly Leu Arg Leu  Leu His Met Asp Pro  His Pro Ile
         2315                    2320                    2325


Glu Asn  Ala Cys Leu Ile Val  Gln Leu Glu Lys Leu  Ser Ala Leu
         2330                    2335                    2340


Ile Ala  Asn Lys Pro Leu Thr  Asn Asn Pro Pro Cys  Leu Leu Leu
         2345                    2350                    2355


Leu Asp  Glu His Met Asn Pro  Ser Tyr Val Leu Trp  Glu Arg Lys
         2360                    2365                    2370


Asp Ser  Ile Pro Ala Pro Asp  Tyr Val Val Phe Trp  Gly Pro Glu
         2375                    2380                    2385


Ser Leu  Ile Asp Leu Pro Tyr  Ile Asp Ser Asp Glu  Asp Ser Phe
         2390                    2395                    2400


Pro Ser  Cys Pro Asp Asp Pro  Phe Tyr Ser Gln Ile  Ile Ala Gly
         2405                    2410                    2415


Tyr Ala  Pro Gln Gly Pro Pro  Asn Leu Asp Thr Thr  Asp Phe Tyr
         2420                    2425                    2430


Pro Thr  Glu Pro Leu Phe Lys  Ser Pro Val Gln Val  Val Arg Ser
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       2435                    2440                    2445


Ser Lys  Cys Lys Lys Met Pro  Val Arg Pro Ala Gln  Pro Ala Gln
         2450                  2455                  2460


Pro Ala  Gln Pro Ala Gln Pro  Ala Gln Thr Val Gln  Pro Ala Gln
         2465                  2470                  2475


Pro Ile  Glu Pro Gly Thr Gln  Ile Val Val Gln Asn  Phe Lys Lys
         2480                  2485                  2490


Pro Gln  Ser Val Lys Thr Thr  Leu Ser Gln Lys Asp  Ile Pro Leu
         2495                  2500                  2505


Tyr Val  Glu Thr Glu Ser Glu  Thr Ala Val Leu Ile  Pro Lys Gln
         2510                  2515                  2520


Leu Thr  Thr Ser Ile Lys Thr  Thr Val Cys Lys Ser  Ile Thr Pro
         2525                  2530                  2535


Pro Asn  Asn Gln Leu Ser Asp  Trp Lys Asn Asn Pro  Gln Gln Asn
         2540                  2545                  2550


Gln Thr  Leu Asn Gln Ala Phe  Ser Lys Pro Ile Leu  Glu Ile Thr
         2555                  2560                  2565


Ser Ile  Pro Thr Asp Asp Ser  Ile Ser Tyr Arg Thr  Trp Ile Glu
         2570                  2575                  2580


Lys Ser  Asn Gln Thr Gln Lys  Arg His Gln Asn Asp  Pro Arg Met
         2585                  2590                  2595


Tyr Asn  Ser Lys Thr Val Phe  His Pro Val Asn Asn  Gln Leu Pro
         2600                  2605                  2610


Ser Trp  Val Asp Thr Ala Ala  Asp Ala Pro Gln Thr  Asp Leu Leu
         2615                  2620                  2625


Thr Asn  Tyr Lys Thr Arg Gln  Pro Ser Pro Asn Phe  Pro Arg Asp
         2630                  2635                  2640


Val His  Thr Trp Gly Val Ser  Ser Asn Pro Phe Asn  Ser Pro Asn
         2645                  2650                  2655


Arg Asp  Leu Tyr Gln Ser Asp  Phe Ser Glu Pro Ser  Asp Gly Tyr
```

```
         2660                    2665                    2670

Ser Ser  Glu Ser Glu Asn Ser  Ile Val Leu Ser Leu  Asp Glu His
         2675                    2680                    2685


Arg Ser  Cys Arg Val Pro Arg  His Val Arg Val Val  Asn Ala Asp
         2690                    2695                    2700


Val Val  Thr Gly Arg Arg Tyr  Val Arg Gly Thr Ala  Leu Gly Ala
         2705                    2710                    2715


Leu Ala  Leu Leu Ser Gln Ala  Cys Arg Arg Met Ile  Asp Asn Val
         2720                    2725                    2730


Arg Tyr  Thr Arg Lys Leu Leu  Met Asp His Thr Glu  Asp Ile Phe
         2735                    2740                    2745


Gln Gly  Leu Gly Tyr Val Lys  Leu Leu Leu Asp Gly  Thr Tyr Ile
         2750                    2755                    2760


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<213>  Varicella zoster

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Met Asp Arg Val Glu Ser Glu Glu Pro Met Asp Gly Phe Glu Ser Pro
1                5                   10                  15


Val Phe Ser Glu Asn Thr Ser Ser Asn Ser Gly Trp Cys Ser Asp Ala
              20                  25                  30


Phe Ser Asp Ser Tyr Ile Ala Tyr Asn Pro Ala Leu Leu Leu Lys Asn
           35                  40                  45


Asp Leu Leu Phe Ser Glu Leu Leu Phe Ala Ser His Leu Ile Asn Val
        50                  55                  60


Pro Arg Ala Ile Glu Asn Asn Val Thr Tyr Glu Ala Ser Ser Ala Val
65                  70                  75                  80


Gly Val Asp Asn Glu Met Thr Ser Ser Thr Thr Glu Phe Ile Glu Glu
                 85                  90                  95


Ile Gly Asp Val Leu Ala Leu Asp Arg Ala Cys Leu Val Cys Arg Thr
              100                 105                 110
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Leu Asp Leu Tyr Lys Arg Lys Phe Gly Leu Thr Pro Glu Trp Val Ala
    115                 120                 125

Asp Tyr Ala Met Leu Cys Met Lys Ser Leu Ala Ser Pro Pro Cys Ala
    130                 135                 140

Val Val Thr Phe Ser Ala Ala Phe Glu Phe Val Tyr Leu Met Asp Arg
145                 150                 155                 160

Tyr Tyr Leu Cys Arg Tyr Asn Val Thr Leu Val Gly Ser Phe Ala Arg
            165                 170                 175

Arg Thr Leu Ser Leu Leu Asp Ile Gln Arg His Phe Phe Leu His Val
            180                 185                 190

Cys Phe Arg Thr Asp Gly Gly Leu Pro Gly Ile Arg Pro Pro Pro Gly
        195                 200                 205

Lys Glu Met Ala Asn Lys Val Arg Tyr Ser Asn Tyr Ser Phe Phe Val
    210                 215                 220

Gln Ala Val Val Arg Ala Ala Leu Leu Ser Ile Ser Thr Ser Arg Leu
225                 230                 235                 240

Asp Glu Thr Glu Thr Arg Lys Ser Phe Tyr Phe Asn Gln Asp Gly Leu
            245                 250                 255

Thr Gly Gly Pro Gln Pro Leu Ala Ala Ala Leu Ala Asn Trp Lys Asp
            260                 265                 270

Cys Ala Arg Met Val Asp Cys Ser Ser Ser Glu His Arg Thr Ser Gly
            275                 280                 285

Met Ile Thr Cys Ala Glu Arg Ala Leu Lys Glu Asp Ile Glu Phe Glu
    290                 295                 300

Asp Ile Leu Ile Asp Lys Leu Lys Lys Ser Ser Tyr Val Glu Ala Ala
305                 310                 315                 320

Trp Gly Tyr Ala Asp Leu Ala Leu Leu Leu Ser Gly Val Ala Thr
            325                 330                 335

Trp Asn Val Asp Glu Arg Thr Asn Cys Ala Ile Glu Thr Arg Val Gly
            340                 345                 350
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Cys Val Lys Ser Tyr Trp Gln Ala Asn Arg Ile Glu Asn Ser Arg Asp
    355   360   365

Val Pro Lys Gln Phe Ser Lys Phe Thr Ser Glu Asp Ala Cys Pro Glu
370   375   380

Val Ala Phe Gly Pro Ile Leu Leu Thr Thr Leu Lys Asn Ala Lys Cys
385   390   395   400

Arg Gly Arg Thr Asn Thr Glu Cys Met Leu Cys Cys Leu Leu Thr Ile
            405   410   415

Gly His Tyr Trp Ile Ala Leu Arg Gln Phe Lys Arg Asp Ile Leu Ala
            420   425   430

Tyr Ser Ala Asn Asn Thr Ser Leu Phe Asp Cys Ile Glu Pro Val Ile
    435   440   445

Asn Ala Trp Ser Leu Asp Asn Pro Ile Lys Leu Lys Phe Pro Phe Asn
    450   455   460

Asp Glu Gly Arg Phe Ile Thr Ile Val Lys Ala Ala Gly Ser Glu Ala
465   470   475   480

Val Tyr Lys His Leu Phe Cys Asp Leu Leu Cys Ala Leu Ser Glu Leu
            485   490   495

Gln Thr Asn Pro Lys Ile Leu Phe Ala His Pro Thr Thr Ala Asp Lys
            500   505   510

Glu Val Leu Glu Leu Tyr Lys Ala Gln Leu Ala Ala Gln Asn Arg Phe
    515   520   525

Glu Gly Arg Val Cys Ala Gly Leu Trp Thr Leu Ala Tyr Ala Phe Lys
    530   535   540

Ala Tyr Gln Ile Phe Pro Arg Lys Pro Thr Ala Asn Ala Ala Phe Ile
545   550   555   560

Arg Asp Gly Gly Leu Met Leu Arg Arg His Ala Ile Ser Leu Val Ser
            565   570   575

Leu Glu His Thr Leu Ser Lys Tyr Val
    580   585

<210> 21
<211> 1204
<212> PRT
<213> Varicella zoster

<400> 21

Met Glu Asn Thr Gln Lys Thr Val Thr Val Pro Thr Gly Pro Leu Gly
1   5   10   15

Tyr Val Tyr Ala Cys Arg Val Glu Asp Leu Asp Leu Glu Glu Ile Ser
            20   25   30

Phe Leu Ala Ala Arg Ser Thr Asp Ser Asp Leu Ala Leu Leu Pro Leu
            35   40   45

Met Arg Asn Leu Thr Val Glu Lys Thr Phe Thr Ser Ser Leu Ala Val
        50   55   60

Val Ser Gly Ala Arg Thr Thr Gly Leu Ala Gly Ala Gly Ile Thr Leu
65   70   75   80

Lys Leu Thr Thr Ser His Phe Tyr Pro Ser Val Phe Val Phe His Gly
                85   90   95

Gly Lys His Val Leu Pro Ser Ser Ala Ala Pro Asn Leu Thr Arg Ala
                100   105   110

Cys Asn Ala Ala Arg Glu Arg Phe Gly Phe Ser Arg Cys Gln Gly Pro
                115   120   125

Pro Val Asp Gly Ala Val Glu Thr Thr Gly Ala Glu Ile Cys Thr Arg
        130   135   140

Leu Gly Leu Glu Pro Glu Asn Thr Ile Leu Tyr Leu Val Val Thr Ala
145   150   155   160

Leu Phe Lys Glu Ala Val Phe Met Cys Asn Val Phe Leu His Tyr Gly
                165   170   175

Gly Leu Asp Ile Val His Ile Asn His Gly Asp Val Ile Arg Ile Pro
                180   185   190

Leu Phe Pro Val Gln Leu Phe Met Pro Asp Val Asn Arg Leu Val Pro
                195   200   205

Asp Pro Phe Asn Thr His His Arg Ser Ile Gly Glu Gly Phe Val Tyr
210   215   220

Pro Thr Pro Phe Tyr Asn Thr Gly Leu Cys His Leu Ile His Asp Cys
225   230   235   240

Val Ile Ala Pro Met Ala Val Ala Leu Arg Val Arg Asn Val Thr Ala
            245   250   255

Val Ala Arg Gly Ala Ala His Leu Ala Phe Asp Glu Asn His Glu Gly
            260   265   270

Ala Val Leu Pro Pro Asp Ile Thr Tyr Thr Tyr Phe Gln Ser Ser Ser
            275   280   285

Ser Gly Thr Thr Thr Ala Arg Gly Ala Arg Arg Asn Asp Val Asn Ser
    290   295   300

Thr Ser Lys Pro Ser Pro Ser Gly Gly Phe Glu Arg Arg Leu Ala Ser
305   310   315   320

Ile Met Ala Ala Asp Thr Ala Leu His Ala Glu Val Ile Phe Asn Thr
            325   330   335

Gly Ile Tyr Glu Glu Thr Pro Thr Asp Ile Lys Glu Trp Pro Met Phe
            340   345   350

Ile Gly Met Glu Gly Thr Leu Pro Arg Leu Asn Ala Leu Gly Ser Tyr
            355   360   365

Thr Ala Arg Val Ala Gly Val Ile Gly Ala Met Val Phe Ser Pro Asn
    370   375   380

Ser Ala Leu Tyr Leu Thr Glu Val Glu Asp Ser Gly Met Thr Glu Ala
385   390   395   400

Lys Asp Gly Gly Pro Gly Pro Ser Phe Asn Arg Phe Tyr Gln Phe Ala
            405   410   415

Gly Pro His Leu Ala Ala Asn Pro Gln Thr Asp Arg Asp Gly His Val
            420   425   430

Leu Ser Ser Gln Ser Thr Gly Ser Ser Asn Thr Glu Phe Ser Val Asp
            435   440   445

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Tyr Leu Ala Leu Ile Cys Gly Phe Gly Ala Pro Leu Leu Ala Arg Leu
    450                 455                 460

Leu Phe Tyr Leu Glu Arg Cys Asp Ala Gly Ala Phe Thr Gly Gly His
465                 470                 475                 480

Gly Asp Ala Leu Lys Tyr Val Thr Gly Thr Phe Asp Ser Glu Ile Pro
                485                 490                 495

Cys Ser Leu Cys Glu Lys His Thr Arg Pro Val Cys Ala His Thr Thr
                500                 505                 510

Val His Arg Leu Arg Gln Arg Met Pro Arg Phe Gly Gln Ala Thr Arg
        515                 520                 525

Gln Pro Ile Gly Val Phe Gly Thr Met Asn Ser Gln Tyr Ser Asp Cys
    530                 535                 540

Asp Pro Leu Gly Asn Tyr Ala Pro Tyr Leu Ile Leu Arg Lys Pro Gly
545                 550                 555                 560

Asp Gln Thr Glu Ala Ala Lys Ala Thr Met Gln Asp Thr Tyr Arg Ala
                565                 570                 575

Thr Leu Glu Arg Leu Phe Ile Asp Leu Glu Gln Glu Arg Leu Leu Asp
            580                 585                 590

Arg Gly Ala Pro Cys Ser Ser Glu Gly Leu Ser Ser Val Ile Val Asp
            595                 600                 605

His Pro Thr Phe Arg Arg Ile Leu Asp Thr Leu Arg Ala Arg Ile Glu
    610                 615                 620

Gln Thr Thr Thr Gln Phe Met Lys Val Leu Val Glu Thr Arg Asp Tyr
625                 630                 635                 640

Lys Ile Arg Glu Gly Leu Ser Glu Ala Thr His Ser Met Ala Leu Thr
                645                 650                 655

Phe Asp Pro Tyr Ser Gly Ala Phe Cys Pro Ile Thr Asn Phe Leu Val
                660                 665                 670

Lys Arg Thr His Leu Ala Val Val Gln Asp Leu Ala Leu Ser Gln Cys
            675                 680                 685
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His Cys Val Phe Tyr Gly Gln Gln Val Glu Gly Arg Asn Phe Arg Asn
690   695   700

Gln Phe Gln Pro Val Leu Arg Arg Arg Phe Val Asp Leu Phe Asn Gly
705   710   715   720

Gly Phe Ile Ser Thr Arg Ser Ile Thr Val Thr Leu Ser Glu Gly Pro
                725   730   735

Val Ser Ala Pro Asn Pro Thr Leu Gly Gln Asp Ala Pro Ala Gly Arg
                740   745   750

Thr Phe Asp Gly Asp Leu Ala Arg Val Ser Val Glu Val Ile Arg Asp
                755   760   765

Ile Arg Val Lys Asn Arg Val Val Phe Ser Gly Asn Cys Thr Asn Leu
            770   775   780

Ser Glu Ala Ala Arg Ala Arg Leu Val Gly Leu Ala Ser Ala Tyr Gln
785   790   795   800

Arg Gln Glu Lys Arg Val Asp Met Leu His Gly Ala Leu Gly Phe Leu
            805   810   815

Leu Lys Gln Phe His Gly Leu Leu Phe Pro Arg Gly Met Pro Pro Asn
                820   825   830

Ser Lys Ser Pro Asn Pro Gln Trp Phe Trp Thr Leu Leu Gln Arg Asn
            835   840   845

Gln Met Pro Ala Asp Lys Leu Thr His Glu Glu Ile Thr Thr Ile Ala
    850   855   860

Ala Val Lys Arg Phe Thr Glu Glu Tyr Ala Ala Ile Asn Phe Ile Asn
865   870   875   880

Leu Pro Pro Thr Cys Ile Gly Glu Leu Ala Gln Phe Tyr Met Ala Asn
                885   890   895

Leu Ile Leu Lys Tyr Cys Asp His Ser Gln Tyr Leu Ile Asn Thr Leu
            900   905   910

Thr Ser Ile Ile Thr Gly Ala Arg Arg Pro Arg Asp Pro Ser Ser Val
    915   920   925

Leu His Trp Ile Arg Lys Asp Val Thr Ser Ala Ala Asp Ile Glu Thr
930   935   940

Gln Ala Lys Ala Leu Leu Glu Lys Thr Glu Asn Leu Pro Glu Leu Trp
945   950   955   960

Thr Thr Ala Phe Thr Ser Thr His Leu Val Arg Ala Ala Met Asn Gln
                965   970   975

Arg Pro Met Val Val Leu Gly Ile Ser Ile Ser Lys Tyr His Gly Ala
                980   985   990

Ala Gly Asn Asn Arg Val Phe Gln Ala Gly Asn Trp Ser Gly Leu Asn
        995   1000   1005

Gly Gly Lys Asn Val Cys Pro Leu Phe Thr Phe Asp Arg Thr Arg
    1010   1015   1020

Arg Phe Ile Ile Ala Cys Pro Arg Gly Gly Phe Ile Cys Pro Val
    1025   1030   1035

Thr Gly Pro Ser Ser Gly Asn Arg Glu Thr Thr Leu Ser Asp Gln
    1040   1045   1050

Val Arg Gly Ile Ile Val Ser Gly Gly Ala Met Val Gln Leu Ala
    1055   1060   1065

Ile Tyr Ala Thr Val Val Arg Ala Val Gly Ala Arg Ala Gln His
    1070   1075   1080

Met Ala Phe Asp Asp Trp Leu Ser Leu Thr Asp Asp Glu Phe Leu
    1085   1090   1095

Ala Arg Asp Leu Glu Glu Leu His Asp Gln Ile Ile Gln Thr Leu
    1100   1105   1110

Glu Thr Pro Trp Thr Val Glu Gly Ala Leu Glu Ala Val Lys Ile
    1115   1120   1125

Leu Asp Glu Lys Thr Thr Ala Gly Asp Gly Glu Thr Pro Thr Asn
    1130   1135   1140

Leu Ala Phe Asn Phe Asp Ser Cys Glu Pro Ser His Asp Thr Thr
    1145   1150   1155

Ser Asn Val Leu Asn Ile Ser Gly Ser Asn Ile Ser Gly Ser Thr
    1160   1165   1170

Val Pro Gly Leu Lys Arg Pro Pro Glu Asp Asp Glu Leu Phe Asp
    1175   1180   1185

Leu Ser Gly Ile Pro Ile Lys His Gly Asn Ile Thr Met Glu Met
    1190   1195   1200

Ile

<210> 22
<211> 770
<212> PRT
<213> Varicella zoster

<400> 22

Met Glu Leu Asp Ile Asn Arg Thr Leu Leu Val Leu Leu Gly Gln Val
1   5   10   15

Tyr Thr Tyr Ile Phe Gln Val Glu Leu Leu Arg Arg Cys Asp Pro Arg
            20   25   30

Val Ala Cys Arg Phe Leu Tyr Arg Leu Ala Ala Asn Cys Leu Thr Val
        35   40   45

Arg Tyr Leu Leu Lys Leu Phe Leu Arg Gly Phe Asn Thr Gln Leu Lys
    50   55   60

Phe Gly Asn Thr Pro Thr Val Cys Ala Leu His Trp Ala Leu Cys Tyr
65   70   75   80

Val Lys Gly Glu Gly Glu Arg Leu Phe Glu Leu Leu Gln His Phe Lys
                85   90   95

Thr Arg Phe Val Tyr Gly Glu Thr Lys Asp Ser Asn Cys Ile Lys Asp
            100   105   110

Tyr Phe Val Ser Ala Phe Asn Leu Lys Thr Cys Gln Tyr His His Glu
        115   120   125

Leu Ser Leu Thr Thr Tyr Gly Gly Tyr Val Ser Ser Glu Ile Gln Phe
    130   135   140

Leu His Asp Ile Glu Asn Phe Leu Lys Gln Leu Asn Tyr Cys Tyr Ile
145   150   155   160

Ile Thr Ser Ser Arg Glu Ala Leu Asn Thr Leu Glu Thr Val Thr Arg
            165   170   175

Phe Met Thr Asp Thr Ile Gly Ser Gly Leu Ile Pro Pro Val Glu Leu
            180   185   190

Phe Asp Pro Ala His Pro Cys Ala Ile Cys Phe Glu Glu Leu Cys Ile
            195   200   205

Thr Ala Asn Gln Gly Glu Thr Leu His Arg Arg Leu Leu Gly Cys Ile
    210   215   220

Cys Asp His Val Thr Lys Gln Val Arg Val Asn Val Asp Val Asp Asp
225   230   235   240

Ile Ile Arg Cys Leu Pro Tyr Ile Pro Asp Val Pro Asp Ile Lys Arg
            245   250   255

Gln Ser Ala Val Glu Ala Leu Arg Thr Leu Gln Thr Lys Thr Val Val
            260   265   270

Asn Pro Met Gly Ala Lys Asn Asp Thr Phe Asp Gln Thr Tyr Glu Ile
        275   280   285

Ala Ser Thr Met Leu Asp Ser Tyr Asn Val Phe Lys Pro Ala Pro Arg
    290   295   300

Cys Met Tyr Ala Ile Ser Glu Leu Lys Phe Trp Leu Thr Ser Asn Ser
305   310   315   320

Thr Glu Gly Pro Gln Arg Thr Leu Asp Val Phe Val Asp Asn Leu Asp
            325   330   335

Val Leu Asn Glu His Glu Lys His Ala Glu Leu Thr Ala Val Thr Val
        340   345   350

Glu Leu Ala Leu Phe Gly Lys Thr Pro Ile His Phe Asp Arg Ala Phe
        355   360   365

Ser Glu Glu Leu Gly Ser Leu Asp Ala Ile Asp Ser Ile Leu Val Gly
    370   375   380

Asn Arg Ser Ser Ser Pro Asp Ser Gln Ile Glu Ala Leu Ile Lys Ala
385   390   395   400

Cys Tyr Ala His His Leu Ser Ser Pro Leu Met Arg His Ile Ser Asn
                405   410   415

Pro Ser His Asp Asn Glu Ala Ala Leu Arg Gln Leu Leu Glu Arg Val
            420   425   430

Gly Cys Glu Asp Asp Leu Thr Lys Glu Ala Ser Asp Ser Ala Thr Ala
            435   440   445

Ser Glu Cys Asp Leu Asn Asp Asp Ser Ser Ile Thr Phe Ala Val His
    450   455   460

Gly Trp Glu Asn Leu Leu Ser Lys Ala Lys Ile Asp Ala Ala Glu Arg
465   470   475   480

Lys Arg Val Tyr Leu Glu His Leu Ser Lys Arg Ser Leu Thr Ser Leu
            485   490   495

Gly Arg Cys Ile Arg Glu Gln Arg Gln Glu Leu Glu Lys Thr Leu Arg
            500   505   510

Val Asn Val Tyr Gly Glu Ala Leu Leu Gln Thr Phe Val Ser Met Gln
        515   520   525

Asn Gly Phe Gly Ala Arg Asn Val Phe Leu Ala Lys Val Ser Gln Ala
    530   535   540

Gly Cys Ile Ile Asp Asn Arg Ile Gln Glu Ala Ala Phe Asp Ala His
545   550   555   560

Arg Phe Ile Arg Asn Thr Leu Val Arg His Thr Val Asp Ala Ala Met
            565   570   575

Leu Pro Ala Leu Thr His Lys Phe Phe Glu Leu Val Asn Gly Pro Leu
            580   585   590

Phe Asn His Asp Glu His Arg Phe Ala Gln Pro Pro Asn Thr Ala Leu
            595   600   605

Phe Phe Thr Val Glu Asn Val Gly Leu Phe Pro His Leu Lys Glu Glu
    610   615   620

Leu Ala Lys Phe Met Gly Gly Val Val Gly Ser Asn Trp Leu Leu Ser
625   630   635   640

Pro Phe Arg Gly Phe Tyr Cys Phe Ser Gly Val Glu Gly Val Thr Phe
                645   650   655

Ala Gln Arg Leu Ala Trp Lys Tyr Ile Arg Glu Leu Val Phe Ala Thr
                660   665   670

Thr Leu Phe Thr Ser Val Phe His Cys Gly Glu Val Arg Leu Cys Arg
                675   680   685

Val Asp Arg Leu Gly Lys Asp Pro Arg Gly Cys Thr Ser Gln Pro Lys
            690   695   700

Gly Ile Gly Ser Ser His Gly Pro Leu Asp Gly Ile Tyr Leu Thr Tyr
705   710   715   720

Glu Glu Thr Cys Pro Leu Val Ala Ile Ile Gln Ser Gly Glu Thr Gly
                725   730   735

Ile Asp Gln Asn Thr Val Val Ile Tyr Asp Ser Asp Val Phe Ser Leu
                740   745   750

Leu Tyr Thr Leu Met Gln Arg Leu Ala Pro Asp Ser Thr Asp Pro Ala
                755   760   765

Phe Ser
    770

<210> 23
<211> 868
<212> PRT
<213> Varicella zoster

<400> 23

Met Phe Val Thr Ala Val Val Ser Val Ser Pro Ser Ser Phe Tyr Glu
1   5   10   15

Ser Leu Gln Val Glu Pro Thr Gln Ser Glu Asp Ile Thr Arg Ser Ala
                20   25   30

His Leu Gly Asp Gly Asp Glu Ile Arg Glu Ala Ile His Lys Ser Gln
            35   40   45

Asp Ala Glu Thr Lys Pro Thr Phe Tyr Val Cys Pro Pro Pro Thr Gly

Ser Thr Ile Val Arg Leu Glu Pro Thr Arg Thr Cys Pro Asp Tyr His
65   70   75   80

Leu Gly Lys Asn Phe Thr Glu Gly Ile Ala Val Val Tyr Lys Glu Asn
                    85   90   95

Ile Ala Ala Tyr Lys Phe Lys Ala Thr Val Tyr Tyr Lys Asp Val Ile
              100   105   110

Val Ser Thr Ala Trp Ala Gly Ser Ser Tyr Thr Gln Ile Thr Asn Arg
              115   120   125

Tyr Ala Asp Arg Val Pro Ile Pro Val Ser Glu Ile Thr Asp Thr Ile
      130   135   140

Asp Lys Phe Gly Lys Cys Ser Ser Lys Ala Thr Tyr Val Arg Asn Asn
145   150   155   160

His Lys Val Glu Ala Phe Asn Glu Asp Lys Asn Pro Gln Asp Met Pro
              165   170   175

Leu Ile Ala Ser Lys Tyr Asn Ser Val Gly Ser Lys Ala Trp His Thr
              180   185   190

Thr Asn Asp Thr Tyr Met Val Ala Gly Thr Pro Gly Thr Tyr Arg Thr
      195   200   205

Gly Thr Ser Val Asn Cys Ile Ile Glu Glu Val Glu Ala Arg Ser Ile
210   215   220

Phe Pro Tyr Asp Ser Phe Gly Leu Ser Thr Gly Asp Ile Ile Tyr Met
225   230   235   240

Ser Pro Phe Phe Gly Leu Arg Asp Gly Ala Tyr Arg Glu His Ser Asn
                    245   250   255

Tyr Ala Met Asp Arg Phe His Gln Phe Glu Gly Tyr Arg Gln Arg Asp
              260   265   270

Leu Asp Thr Arg Ala Leu Leu Glu Pro Ala Ala Arg Asn Phe Leu Val
              275   280   285

Thr Pro His Leu Thr Val Gly Trp Asn Trp Lys Pro Lys Arg Thr Glu

Val Cys Ser Leu Val Lys Trp Arg Glu Val Glu Asp Val Val Arg Asp
305   310   315   320

Glu Tyr Ala His Asn Phe Arg Phe Thr Met Lys Thr Leu Ser Thr Thr
                325   330   335

Phe Ile Ser Glu Thr Asn Glu Phe Asn Leu Asn Gln Ile His Leu Ser
                340   345   350

Gln Cys Val Lys Glu Glu Ala Arg Ala Ile Ile Asn Arg Ile Tyr Thr
                355   360   365

Thr Arg Tyr Asn Ser Ser His Val Arg Thr Gly Asp Ile Gln Thr Tyr
                370   375   380

Leu Ala Arg Gly Gly Phe Val Val Val Phe Gln Pro Leu Leu Ser Asn
385   390   395   400

Ser Leu Ala Arg Leu Tyr Leu Gln Glu Leu Val Arg Glu Asn Thr Asn
                405   410   415

His Ser Pro Gln Lys His Pro Thr Arg Asn Thr Arg Ser Arg Arg Ser
                420   425   430

Val Pro Val Glu Leu Arg Ala Asn Arg Thr Ile Thr Thr Thr Ser Ser
                435   440   445

Val Glu Phe Ala Met Leu Gln Phe Thr Tyr Asp His Ile Gln Glu His
450   455   460

Val Asn Glu Met Leu Ala Arg Ile Ser Ser Ser Trp Cys Gln Leu Gln
465   470   475   480

Asn Arg Glu Arg Ala Leu Trp Ser Gly Leu Phe Pro Ile Asn Pro Ser
                485   490   495

Ala Leu Ala Ser Thr Ile Leu Asp Gln Arg Val Lys Ala Arg Ile Leu
                500   505   510

Gly Asp Val Ile Ser Val Ser Asn Cys Pro Glu Leu Gly Ser Asp Thr
                515   520   525

Arg Ile Ile Leu Gln Asn Ser Met Arg Val Ser Gly Ser Thr Thr Arg

Cys Tyr Ser Arg Pro Leu Ile Ser Ile Val Ser Leu Asn Gly Ser Gly
545   550   555   560

Thr Val Glu Gly Gln Leu Gly Thr Asp Asn Glu Leu Ile Met Ser Arg
                565   570   575

Asp Leu Leu Glu Pro Cys Val Ala Asn His Lys Arg Tyr Phe Leu Phe
                580   585   590

Gly His His Tyr Val Tyr Tyr Glu Asp Tyr Arg Tyr Val Arg Glu Ile
                595   600   605

Ala Val His Asp Val Gly Met Ile Ser Thr Tyr Val Asp Leu Asn Leu
                610   615   620

Thr Leu Leu Lys Asp Arg Glu Phe Met Pro Leu Gln Val Tyr Thr Arg
625   630   635   640

Asp Glu Leu Arg Asp Thr Gly Leu Leu Asp Tyr Ser Glu Ile Gln Arg
                645   650   655

Arg Asn Gln Met His Ser Leu Arg Phe Tyr Asp Ile Asp Lys Val Val
                660   665   670

Gln Tyr Asp Ser Gly Thr Ala Ile Met Gln Gly Met Ala Gln Phe Phe
                675   680   685

Gln Gly Leu Gly Thr Ala Gly Gln Ala Val Gly His Val Val Leu Gly
690   695   700

Ala Thr Gly Ala Leu Leu Ser Thr Val His Gly Phe Thr Thr Phe Leu
705   710   715   720

Ser Asn Pro Phe Gly Ala Leu Ala Val Gly Leu Leu Val Leu Ala Gly
                725   730   735

Leu Val Ala Ala Phe Phe Ala Tyr Arg Tyr Val Leu Lys Leu Lys Thr
                740   745   750

Ser Pro Met Lys Ala Leu Tyr Pro Leu Thr Thr Lys Gly Leu Lys Gln
                755   760   765

Leu Pro Glu Gly Met Asp Pro Phe Ala Glu Lys Pro Asn Ala Thr Asp

Thr Pro Ile Glu Glu Ile Gly Asp Ser Gln Asn Thr Glu Pro Ser Val
785   790   795   800

Asn Ser Gly Phe Asp Pro Asp Lys Phe Arg Glu Ala Gln Glu Met Ile
                     805   810   815

Lys Tyr Met Thr Leu Val Ser Ala Ala Glu Arg Gln Glu Ser Lys Ala
                 820   825   830

Arg Lys Lys Asn Lys Thr Ser Ala Leu Leu Thr Ser Arg Leu Thr Gly
             835   840   845

Leu Ala Leu Arg Asn Arg Arg Gly Tyr Ser Arg Val Arg Thr Glu Asn
         850   855   860

Val Thr Gly Val
865

<210> 24
<211> 143
<212> PRT
<213> Varicella zoster

<400> 24

Met Glu Ser Ser Asn Ile Asn Ala Leu Gln Gln Pro Ser Ser Ile Ala
1   5   10   15

His His Pro Ser Lys Gln Cys Ala Ser Ser Leu Asn Glu Thr Val Lys
                20   25   30

Asp Ser Pro Pro Ala Ile Tyr Glu Asp Arg Leu Glu His Thr Pro Val
             35   40   45

Gln Leu Pro Arg Asp Gly Thr Pro Arg Asp Val Cys Ser Val Gly Gln
         50   55   60

Leu Thr Cys Arg Ala Cys Ala Thr Lys Pro Phe Arg Leu Asn Arg Asp
65   70   75   80

Ser Gln Tyr Asp Tyr Leu Asn Thr Cys Pro Gly Gly Arg His Ile Ser
                 85   90   95

Leu Ala Leu Glu Ile Ile Thr Gly Arg Trp Val Cys Ile Pro Arg Val
             100   105   110

Phe Pro Asp Thr Pro Glu Glu Lys Trp Met Ala Pro Tyr Ile Ile Pro
    115   120   125

Asp Arg Glu Gln Pro Ser Ser Gly Asp Glu Asp Ser Asp Thr Asp
    130   135   140

<210> 25
<211> 341
<212> PRT
<213> Varicella zoster

<400> 25

Met Ser Thr Asp Lys Thr Asp Val Lys Met Gly Val Leu Arg Ile Tyr
1   5   10   15

Leu Asp Gly Ala Tyr Gly Ile Gly Lys Thr Thr Ala Ala Glu Glu Phe
            20   25   30

Leu His His Phe Ala Ile Thr Pro Asn Arg Ile Leu Leu Ile Gly Glu
        35   40   45

Pro Leu Ser Tyr Trp Arg Asn Leu Ala Gly Glu Asp Ala Ile Cys Gly
    50   55   60

Ile Tyr Gly Thr Gln Thr Arg Arg Leu Asn Gly Asp Val Ser Pro Glu
65   70   75   80

Asp Ala Gln Arg Leu Thr Ala His Phe Gln Ser Leu Phe Cys Ser Pro
            85   90   95

His Ala Ile Met His Ala Lys Ile Ser Ala Leu Met Asp Thr Ser Thr
            100   105   110

Ser Asp Leu Val Gln Val Asn Lys Glu Pro Tyr Lys Ile Met Leu Ser
        115   120   125

Asp Arg His Pro Ile Ala Ser Thr Ile Cys Phe Pro Leu Ser Arg Tyr
    130   135   140

Leu Val Gly Asp Met Ser Pro Ala Ala Leu Pro Gly Leu Leu Phe Thr
145   150   155   160

Leu Pro Ala Glu Pro Pro Gly Thr Asn Leu Val Val Cys Thr Val Ser
            165   170   175

Leu Pro Ser His Leu Ser Arg Val Ser Lys Arg Ala Arg Pro Gly Glu
        180   185   190

Thr Val Asn Leu Pro Phe Val Met Val Leu Arg Asn Val Tyr Ile Met
        195   200   205

Leu Ile Asn Thr Ile Ile Phe Leu Lys Thr Asn Asn Trp His Ala Gly
        210   215   220

Trp Asn Thr Leu Ser Phe Cys Asn Asp Val Phe Lys Gln Lys Leu Gln
225   230   235   240

Lys Ser Glu Cys Ile Lys Leu Arg Glu Val Pro Gly Ile Glu Asp Thr
                245   250   255

Leu Phe Ala Val Leu Lys Leu Pro Glu Leu Cys Gly Glu Phe Gly Asn
                260   265   270

Ile Leu Pro Leu Trp Ala Trp Gly Met Glu Thr Leu Ser Asn Cys Ser
        275   280   285

Arg Ser Met Ser Pro Phe Val Leu Ser Leu Glu Gln Thr Pro Gln His
        290   295   300

Ala Ala Gln Glu Leu Lys Thr Leu Leu Pro Gln Met Thr Pro Ala Asn
305   310   315   320

Met Ser Ser Gly Ala Trp Asn Ile Leu Lys Glu Leu Val Asn Ala Val
                325   330   335

Gln Asp Asn Thr Ser
                340

<210>   26
<211>   841
<212>   PRT
<213>   Varicella zoster

<400>   26

Met Phe Ala Leu Val Leu Ala Val Val Ile Leu Pro Leu Trp Thr Thr
1   5   10   15

Ala Asn Lys Ser Tyr Val Thr Pro Thr Pro Ala Thr Arg Ser Ile Gly
                20   25   30

His Met Ser Ala Leu Leu Arg Glu Tyr Ser Asp Arg Asn Met Ser Leu
    35   40   45

Lys Leu Glu Ala Phe Tyr Pro Thr Gly Phe Asp Glu Glu Leu Ile Lys
    50   55   60

Ser Leu His Trp Gly Asn Asp Arg Lys His Val Phe Leu Val Ile Val
65   70   75   80

Lys Val Asn Pro Thr Thr His Glu Gly Asp Val Gly Leu Val Ile Phe
                    85   90   95

Pro Lys Tyr Leu Leu Ser Pro Tyr His Phe Lys Ala Glu His Arg Ala
                100   105   110

Pro Phe Pro Ala Gly Arg Phe Gly Phe Leu Ser His Pro Val Thr Pro
                115   120   125

Asp Val Ser Phe Phe Asp Ser Ser Phe Ala Pro Tyr Leu Thr Thr Gln
    130   135   140

His Leu Val Ala Phe Thr Thr Phe Pro Pro Asn Pro Leu Val Trp His
145   150   155   160

Leu Glu Arg Ala Glu Thr Ala Ala Thr Ala Glu Arg Pro Phe Gly Val
                165   170   175

Ser Leu Leu Pro Ala Arg Pro Thr Val Pro Lys Asn Thr Ile Leu Glu
                180   185   190

His Lys Ala His Phe Ala Thr Trp Asp Ala Leu Ala Arg His Thr Phe
                195   200   205

Phe Ser Ala Glu Ala Ile Ile Thr Asn Ser Thr Leu Arg Ile His Val
    210   215   220

Pro Leu Phe Gly Ser Val Trp Pro Ile Arg Tyr Trp Ala Thr Gly Ser
225   230   235   240

Val Leu Leu Thr Ser Asp Ser Gly Arg Val Glu Val Asn Ile Gly Val
                245   250   255

Gly Phe Met Ser Ser Leu Ile Ser Leu Ser Ser Gly Pro Pro Ile Glu
                260   265   270

Leu Ile Val Val Pro His Thr Val Lys Leu Asn Ala Val Thr Ser Asp
        275   280   285

Thr Thr Trp Phe Gln Leu Asn Pro Pro Gly Pro Asp Pro Gly Pro Ser
        290   295   300

Tyr Arg Val Tyr Leu Leu Gly Arg Gly Leu Asp Met Asn Phe Ser Lys
305   310   315   320

His Ala Thr Val Asp Ile Cys Ala Tyr Pro Glu Glu Ser Leu Asp Tyr
                325   330   335

Arg Tyr His Leu Ser Met Ala His Thr Glu Ala Leu Arg Met Thr Thr
            340   345   350

Lys Ala Asp Gln His Asp Ile Asn Glu Glu Ser Tyr Tyr His Ile Ala
        355   360   365

Ala Arg Ile Ala Thr Ser Ile Phe Ala Leu Ser Glu Met Gly Arg Thr
        370   375   380

Thr Glu Tyr Phe Leu Leu Asp Glu Ile Val Asp Val Gln Tyr Gln Leu
385   390   395   400

Lys Phe Leu Asn Tyr Ile Leu Met Arg Ile Gly Ala Gly Ala His Pro
                405   410   415

Asn Thr Ile Ser Gly Thr Ser Asp Leu Ile Phe Ala Asp Pro Ser Gln
                420   425   430

Leu His Asp Glu Leu Ser Leu Leu Phe Gly Gln Val Lys Pro Ala Asn
        435   440   445

Val Asp Tyr Phe Ile Ser Tyr Asp Glu Ala Arg Asp Gln Leu Lys Thr
        450   455   460

Ala Tyr Ala Leu Ser Arg Gly Gln Asp His Val Asn Ala Leu Ser Leu
465   470   475   480

Ala Arg Arg Val Ile Met Ser Ile Tyr Lys Gly Leu Leu Val Lys Gln
                485   490   495

Asn Leu Asn Ala Thr Glu Arg Gln Ala Leu Phe Phe Ala Ser Met Ile
        500   505   510

Leu Leu Asn Phe Arg Glu Gly Leu Glu Asn Ser Ser Arg Val Leu Asp
515   520   525

Gly Arg Thr Thr Leu Leu Leu Met Thr Ser Met Cys Thr Ala Ala His
530   535   540

Ala Thr Gln Ala Ala Leu Asn Ile Gln Glu Gly Leu Ala Tyr Leu Asn
545   550   555   560

Pro Ser Lys His Met Phe Thr Ile Pro Asn Val Tyr Ser Pro Cys Met
565   570   575

Gly Ser Leu Arg Thr Asp Leu Thr Glu Glu Ile His Val Met Asn Leu
580   585   590

Leu Ser Ala Ile Pro Thr Arg Pro Gly Leu Asn Glu Val Leu His Thr
595   600   605

Gln Leu Asp Glu Ser Glu Ile Phe Asp Ala Ala Phe Lys Thr Met Met
610   615   620

Ile Phe Thr Thr Trp Thr Ala Lys Asp Leu His Ile Leu His Thr His
625   630   635   640

Val Pro Glu Val Phe Thr Cys Gln Asp Ala Ala Ala Arg Asn Gly Glu
645   650   655

Tyr Val Leu Ile Leu Pro Ala Val Gln Gly His Ser Tyr Val Ile Thr
660   665   670

Arg Asn Lys Pro Gln Arg Gly Leu Val Tyr Ser Leu Ala Asp Val Asp
675   680   685

Val Tyr Asn Pro Ile Ser Val Val Tyr Leu Ser Arg Asp Thr Cys Val
690   695   700

Ser Glu His Gly Val Ile Glu Thr Val Ala Leu Pro His Pro Asp Asn
705   710   715   720

Leu Lys Glu Cys Leu Tyr Cys Gly Ser Val Phe Leu Arg Tyr Leu Thr
725   730   735

Thr Gly Ala Ile Met Asp Ile Ile Ile Asp Ser Lys Asp Thr Glu
740   745   750

Arg Gln Leu Ala Ala Met Gly Asn Ser Thr Ile Pro Pro Phe Asn Pro
        755   760   765

Asp Met His Gly Asp Asp Ser Lys Ala Val Leu Leu Phe Pro Asn Gly
        770   775   780

Thr Val Val Thr Leu Leu Gly Phe Glu Arg Arg Gln Ala Ile Arg Met
785   790   795   800

Ser Gly Gln Tyr Leu Gly Ala Ser Leu Gly Gly Ala Phe Leu Ala Val
                805   810   815

Val Gly Phe Gly Ile Ile Gly Trp Met Leu Cys Gly Asn Ser Arg Leu
                820   825   830

Arg Glu Tyr Asn Lys Ile Pro Leu Thr
        835   840

<210> 27
<211> 240
<212> PRT
<213> Varicella zoster

<400> 27

Met Asn Pro Pro Gln Ala Arg Val Ser Glu Gln Thr Lys Asp Leu Leu
1   5   10   15

Ser Val Met Val Asn Gln His Pro Glu Glu Asp Ala Lys Val Cys Lys
                20   25   30

Ser Ser Asp Asn Ser Pro Leu Tyr Asn Thr Met Val Met Leu Ser Tyr
        35   40   45

Gly Gly Asp Thr Asp Leu Leu Leu Ser Ser Ala Cys Thr Arg Thr Ser
        50   55   60

Thr Val Asn Arg Ser Ala Phe Thr Gln His Ser Val Phe Tyr Ile Ile
65   70   75   80

Ser Thr Val Leu Ile Gln Pro Ile Cys Cys Ile Phe Phe Phe Phe Tyr
                85   90   95

Tyr Lys Ala Thr Arg Cys Met Leu Leu Phe Thr Ala Gly Leu Leu Leu
        100   105   110

Thr Ile Leu His His Phe Arg Leu Ile Ile Met Leu Leu Cys Val Tyr

```
                115                    120                    125

Arg Asn Ile Arg Ser Asp Leu Leu Pro Leu Ser Thr Ser Gln Gln Leu
    130                 135             140

Leu Leu Gly Ile Ile Val Val Thr Arg Thr Met Leu Phe Cys Ile Thr
145                 150             155                 160

Ala Tyr Tyr Thr Leu Phe Ile Asp Thr Arg Val Phe Phe Leu Ile Thr
                165             170                 175

Gly His Leu Gln Ser Glu Val Ile Phe Pro Asp Ser Val Ser Lys Ile
            180             185             190

Leu Pro Val Ser Trp Gly Pro Ser Pro Ala Val Leu Leu Val Met Ala
            195             200             205

Ala Val Ile Tyr Ala Met Asp Cys Leu Val Asp Thr Val Ser Phe Ile
    210             215             220

Gly Pro Arg Val Trp Val Arg Val Met Leu Lys Thr Ser Ile Ser Phe
225             230             235             240


<210>  28
<211>  1396
<212>  PRT
<213>  Varicella zoster

<400>  28

Met Thr Thr Val Ser Cys Pro Ala Asn Val Ile Thr Thr Thr Glu Ser
1               5               10                  15

Asp Arg Ile Ala Gly Leu Phe Asn Ile Pro Ala Gly Ile Ile Pro Thr
            20              25              30

Gly Asn Val Leu Ser Thr Ile Glu Val Cys Ala His Arg Cys Ile Phe
            35              40              45

Asp Phe Phe Lys Gln Ile Arg Ser Asp Asp Asn Ser Leu Tyr Ser Ala
    50              55              60

Gln Phe Asp Ile Leu Leu Gly Thr Tyr Cys Asn Thr Leu Asn Phe Val
65              70              75              80

Arg Phe Leu Glu Leu Gly Leu Ser Val Ala Cys Ile Cys Thr Lys Phe
                85              90              95
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Pro Glu Leu Ala Tyr Val Arg Asp Gly Val Ile Gln Phe Glu Val Gln
            100   105   110

Gln Pro Met Ile Ala Arg Asp Gly Pro His Pro Val Asp Gln Pro Val
            115   120   125

His Asn Tyr Met Val Lys Arg Ile His Lys Arg Ser Leu Ser Ala Ala
            130   135   140

Phe Ala Ile Ala Ser Glu Ala Leu Ser Leu Leu Ser Asn Thr Tyr Val
145   150   155   160

Asp Gly Thr Glu Ile Asp Ser Ser Leu Arg Ile Arg Ala Ile Gln Gln
                    165   170   175

Met Ala Arg Asn Leu Arg Thr Val Leu Asp Ser Phe Glu Arg Gly Thr
            180   185   190

Ala Asp Gln Leu Leu Gly Val Leu Leu Glu Lys Ala Pro Pro Leu Ser
            195   200   205

Leu Leu Ser Pro Ile Asn Lys Phe Gln Pro Glu Gly His Leu Asn Arg
            210   215   220

Val Ala Arg Ala Ala Leu Leu Ser Asp Leu Lys Arg Arg Val Cys Ala
225   230   235   240

Asp Met Phe Phe Met Thr Arg His Ala Arg Glu Pro Arg Leu Ile Ser
            245   250   255

Ala Tyr Leu Ser Asp Met Val Ser Cys Thr Gln Pro Ser Val Met Val
            260   265   270

Ser Arg Ile Thr His Thr Asn Thr Arg Gly Arg Gln Val Asp Gly Val
            275   280   285

Leu Val Thr Thr Ala Thr Leu Lys Arg Gln Leu Leu Gln Gly Ile Leu
            290   295   300

Gln Ile Asp Asp Thr Ala Ala Asp Val Pro Val Thr Tyr Gly Glu Met
305   310   315   320

Val Leu Gln Gly Thr Asn Leu Val Thr Ala Leu Val Met Gly Lys Ala
                    325   330   335

Val Arg Gly Met Asp Asp Val Ala Arg His Leu Leu Asp Ile Thr Asp
        340   345   350

Pro Asn Thr Leu Asn Ile Pro Ser Ile Pro Pro Gln Ser Asn Ser Asp
        355   360   365

Ser Thr Thr Ala Gly Leu Pro Val Asn Ala Arg Val Pro Ala Asp Leu
        370   375   380

Val Ile Val Gly Asp Lys Leu Val Phe Leu Glu Ala Leu Glu Arg Arg
385   390   395   400

Val Tyr Gln Ala Thr Arg Val Ala Tyr Pro Leu Ile Gly Asn Ile Asp
                405   410   415

Ile Thr Phe Ile Met Pro Met Gly Val Phe Gln Ala Asn Ser Met Asp
                420   425   430

Arg Tyr Thr Arg His Ala Gly Asp Phe Ser Thr Val Ser Glu Gln Asp
        435   440   445

Pro Arg Gln Phe Pro Pro Gln Gly Ile Phe Phe Tyr Asn Lys Asp Gly
        450   455   460

Ile Leu Thr Gln Leu Thr Leu Arg Asp Ala Met Gly Thr Ile Cys His
465   470   475   480

Ser Ser Leu Leu Asp Val Glu Ala Thr Leu Val Ala Leu Arg Gln Gln
                485   490   495

His Leu Asp Arg Gln Cys Tyr Phe Gly Val Tyr Val Ala Glu Gly Thr
        500   505   510

Glu Asp Thr Leu Asp Val Gln Met Gly Arg Phe Met Glu Thr Trp Ala
        515   520   525

Asp Met Met Pro His His Pro His Trp Val Asn Glu His Leu Thr Ile
        530   535   540

Leu Gln Phe Ile Ala Pro Ser Asn Pro Arg Leu Arg Phe Glu Leu Asn
545   550   555   560

Pro Ala Phe Asp Phe Phe Val Ala Pro Gly Asp Val Asp Leu Pro Gly
                565   570   575

Pro Gln Arg Pro Pro Glu Ala Met Pro Thr Val Asn Ala Thr Leu Arg
        580   585   590

Ile Ile Asn Gly Asn Ile Pro Val Pro Leu Cys Pro Ile Ser Phe Arg
        595   600   605

Asp Cys Arg Gly Thr Gln Leu Gly Leu Gly Arg His Thr Met Thr Pro
        610   615   620

Ala Thr Ile Lys Ala Val Lys Asp Thr Phe Glu Asp Arg Ala Tyr Pro
625   630   635   640

Thr Ile Phe Tyr Met Leu Glu Ala Val Ile His Gly Asn Glu Arg Asn
                645   650   655

Phe Cys Ala Leu Leu Arg Leu Leu Thr Gln Cys Ile Arg Gly Tyr Trp
                660   665   670

Glu Gln Ser His Arg Val Ala Phe Val Asn Asn Phe His Met Leu Met
        675   680   685

Tyr Ile Thr Thr Tyr Leu Gly Asn Gly Glu Leu Pro Glu Val Cys Ile
        690   695   700

Asn Ile Tyr Arg Asp Leu Leu Gln His Val Arg Ala Leu Arg Gln Thr
705   710   715   720

Ile Thr Asp Phe Thr Ile Gln Gly Glu Gly His Asn Gly Glu Thr Ser
                725   730   735

Glu Ala Leu Asn Asn Ile Leu Thr Asp Asp Thr Phe Ile Ala Pro Ile
                740   745   750

Leu Trp Asp Cys Asp Ala Leu Ile Tyr Arg Asp Glu Ala Ala Arg Asp
                755   760   765

Arg Leu Pro Ala Ile Arg Val Ser Gly Arg Asn Gly Tyr Gln Ala Leu
        770   775   780

His Phe Val Asp Met Ala Gly His Asn Phe Gln Arg Arg Asp Asn Val
785   790   795   800

Leu Ile His Gly Arg Pro Val Arg Gly Asp Thr Gly Gln Gly Ile Pro
                805   810   815

Ile Thr Pro His His Asp Arg Glu Trp Gly Ile Leu Ser Lys Ile Tyr
        820   825   830

Tyr Tyr Ile Val Ile Pro Ala Phe Ser Arg Gly Ser Cys Cys Thr Met
        835   840   845

Gly Val Arg Tyr Asp Arg Leu Tyr Pro Ala Leu Gln Ala Val Ile Val
        850   855   860

Pro Glu Ile Pro Ala Asp Glu Glu Ala Pro Thr Thr Pro Glu Asp Pro
865   870   875   880

Arg His Pro Leu His Ala His Gln Leu Val Pro Asn Ser Leu Asn Val
                885   890   895

Tyr Phe His Asn Ala His Leu Thr Val Asp Gly Asp Ala Leu Leu Thr
                900   905   910

Leu Gln Glu Leu Met Gly Asp Met Ala Glu Arg Thr Thr Ala Ile Leu
        915   920   925

Val Ser Ser Ala Pro Asp Ala Gly Ala Ala Thr Ala Thr Thr Arg Asn
        930   935   940

Met Arg Ile Tyr Asp Gly Ala Leu Tyr His Gly Leu Ile Met Met Ala
945   950   955   960

Tyr Gln Ala Tyr Asp Glu Thr Ile Ala Thr Gly Thr Phe Phe Tyr Pro
                965   970   975

Val Pro Val Asn Pro Leu Phe Ala Cys Pro Glu His Leu Ala Ser Leu
                980   985   990

Arg Gly Met Thr Asn Ala Arg Arg Val Leu Ala Lys Met Val Pro Pro
        995   1000   1005

Ile Pro Pro Phe Leu Gly Ala Asn His His Ala Thr Ile Arg Gln
    1010   1015   1020

Pro Val Ala Tyr His Val Thr His Ser Lys Ser Asp Phe Asn Thr
    1025   1030   1035

Leu Thr Tyr Ser Leu Leu Gly Gly Tyr Phe Lys Phe Thr Pro Ile
    1040   1045   1050

Ser Leu Thr His Gln Leu Arg Thr Gly Phe His Pro Gly Ile Ala
    1055   1060   1065

Phe Thr Val Val Arg Gln Asp Arg Phe Ala Thr Glu Gln Leu Leu
    1070   1075   1080

Tyr Ala Glu Arg Ala Ser Glu Ser Tyr Phe Val Gly Gln Ile Gln
    1085   1090   1095

Val His His His Asp Ala Ile Gly Gly Val Asn Phe Thr Leu Thr
    1100   1105   1110

Gln Pro Arg Ala His Val Asp Leu Gly Val Gly Tyr Thr Ala Val
    1115   1120   1125

Cys Ala Thr Ala Ala Leu Arg Cys Pro Leu Thr Asp Met Gly Asn
    1130   1135   1140

Thr Ala Gln Asn Leu Phe Phe Ser Arg Gly Gly Val Pro Met Leu
    1145   1150   1155

His Asp Asn Val Thr Glu Ser Leu Arg Arg Ile Thr Ala Ser Gly
    1160   1165   1170

Gly Arg Leu Asn Pro Thr Glu Pro Leu Pro Ile Phe Gly Gly Leu
    1175   1180   1185

Arg Pro Ala Thr Ser Ala Gly Ile Ala Arg Gly Gln Ala Ser Val
    1190   1195   1200

Cys Glu Phe Val Ala Met Pro Val Ser Thr Asp Leu Gln Tyr Phe
    1205   1210   1215

Arg Thr Ala Cys Asn Pro Arg Gly Arg Ala Ser Gly Met Leu Tyr
    1220   1225   1230

Met Gly Asp Arg Asp Ala Asp Ile Glu Ala Ile Met Phe Asp His
    1235   1240   1245

Thr Gln Ser Asp Val Ala Tyr Thr Asp Arg Ala Thr Leu Asn Pro
    1250   1255   1260

Trp Ala Ser Gln Lys His Ser Tyr Gly Asp Arg Leu Tyr Asn Gly
    1265   1270   1275

Thr Tyr Asn Leu Thr Gly Ala Ser Pro Ile Tyr Ser Pro Cys Phe
    1280   1285   1290

Lys Phe Phe Thr Pro Ala Glu Val Asn Thr Asn Cys Asn Thr Leu
    1295   1300   1305

Asp Arg Leu Leu Met Glu Ala Lys Ala Val Ala Ser Gln Ser Ser
    1310   1315   1320

Thr Asp Thr Glu Tyr Gln Phe Lys Arg Pro Pro Gly Ser Thr Glu
    1325   1330   1335

Met Thr Gln Asp Pro Cys Gly Leu Phe Gln Glu Ala Tyr Pro Pro
    1340   1345   1350

Leu Cys Ser Ser Asp Ala Ala Met Leu Arg Thr Ala His Ala Gly
    1355   1360   1365

Glu Thr Gly Ala Asp Glu Val His Leu Ala Gln Tyr Leu Ile Arg
    1370   1375   1380

Asp Ala Ser Pro Leu Arg Gly Cys Leu Pro Leu Pro Arg
    1385   1390   1395

<210> 29
<211> 316
<212> PRT
<213> Varicella zoster

<400> 29

Met Ala Met Pro Phe Glu Ile Glu Val Leu Leu Pro Gly Glu Leu Ser
1   5   10   15

Pro Ala Glu Thr Ser Ala Leu Gln Lys Cys Glu Gly Lys Ile Ile Thr
            20   25   30

Phe Ser Thr Leu Arg His Arg Ala Ser Leu Val Asp Ile Ala Leu Ser
        35   40   45

Ser Tyr Tyr Ile Asn Gly Ala Pro Pro Asp Thr Leu Ser Leu Leu Glu
    50   55   60

Ala Tyr Arg Met Arg Phe Ala Ala Val Ile Thr Arg Val Ile Pro Gly
65   70   75   80

Lys Leu Leu Ala His Ala Ile Gly Val Gly Thr Pro Thr Pro Gly Leu
                85   90   95

Phe Ile Gln Asn Thr Ser Pro Val Asp Leu Cys Asn Gly Asp Tyr Ile
                100   105   110

Cys Leu Leu Pro Pro Val Phe Gly Ser Ala Asp Ser Ile Arg Leu Asp
                115   120   125

Ser Val Gly Leu Glu Ile Val Phe Pro Leu Thr Ile Pro Gln Thr Leu
                130   135   140

Met Arg Glu Ile Ile Ala Lys Val Val Ala Arg Ala Val Glu Arg Thr
145   150   155   160

Ala Ala Gly Ala Gln Ile Leu Pro His Glu Val Leu Arg Gly Ala Asp
                165   170   175

Val Ile Cys Tyr Asn Gly Arg Arg Tyr Glu Leu Glu Thr Asn Leu Gln
                180   185   190

His Arg Asp Gly Ser Asp Ala Ala Ile Arg Thr Leu Val Leu Asn Leu
                195   200   205

Met Phe Ser Ile Asn Glu Gly Cys Leu Leu Leu Ala Leu Ile Pro
                210   215   220

Thr Leu Leu Val Gln Gly Ala His Asp Gly Tyr Val Asn Leu Leu Ile
225   230   235   240

Gln Thr Ala Asn Cys Val Arg Glu Thr Gly Gln Leu Ile Asn Ile Pro
                245   250   255

Pro Met Pro Arg Ile Gln Asp Gly His Arg Arg Phe Pro Ile Tyr Glu
                260   265   270

Thr Ile Ser Ser Trp Ile Ser Thr Ser Ser Arg Leu Gly Asp Thr Leu
                275   280   285

Gly Thr Arg Ala Ile Leu Arg Val Cys Val Phe Asp Gly Pro Ser Thr
                290   295   300

Val His Pro Gly Asp Arg Thr Ala Val Ile Gln Val
305   310   315

<210> 30
<211> 676
<212> PRT
<213> Varicella zoster

<400> 30

Met Glu Ala His Leu Ala Asn Glu Thr Lys His Ala Leu Trp His Asn
1   5   10   15

Asp His Thr Lys Gly Leu Leu His Val Val Ile Pro Asn Ala Gly Leu
                20   25   30

Ile Ala Ala Gly Ile Asp Pro Ala Leu Leu Ile Leu Lys Lys Pro Gly
                35   40   45

Gln Arg Phe Lys Val Glu Val Gln Thr Arg Tyr His Ala Thr Gly Gln
        50   55   60

Cys Glu Pro Trp Cys Gln Val Phe Ala Ala Tyr Ile Pro Asp Asn Ala
65   70   75   80

Leu Thr Asn Leu Leu Ile Pro Lys Thr Glu Pro Phe Val Ser His Val
                85   90   95

Phe Ser Ala Thr His Asn Ser Gly Gly Leu Ile Leu Ser Leu Pro Val
                100   105   110

Tyr Leu Ser Pro Gly Leu Phe Phe Asp Ala Phe Asn Val Val Ala Ile
            115   120   125

Arg Ile Asn Thr Gly Asn Arg Lys His Arg Asp Ile Cys Ile Met Tyr
        130   135   140

Ala Glu Leu Ile Pro Asn Gly Thr Arg Tyr Phe Ala Asp Gly Gln Arg
145   150   155   160

Val Leu Leu Leu Cys Lys Gln Leu Ile Ala Tyr Ile Arg Cys Thr Pro
                165   170   175

Arg Leu Ala Ser Ser Ile Lys Ile Tyr Ala Glu His Met Val Ala Ala
            180   185   190

Met Gly Glu Ser His Thr Ser Asn Gly Asp Asn Ile Gly Pro Val Ser
        195   200   205

Ser Ile Ile Asp Leu Asp Arg Gln Leu Thr Ser Gly Gly Ile Asp Asp
210   215   220

Ser Pro Ala Glu Thr Arg Ile Gln Glu Asn Asn Arg Asp Val Leu Glu
225   230   235   240

Leu Ile Lys Arg Ala Val Asn Ile Val Asn Ser Arg His Pro Val Arg
            245   250   255

Pro Ser Ser Ser Arg Val Ala Ser Gly Leu Leu Gln Ser Ala Lys Gly
            260   265   270

His Gly Ala Gln Thr Ser Asn Thr Asp Pro Ile Asn Asn Gly Ser Phe
            275   280   285

Asp Gly Val Leu Glu Pro Pro Gly Gln Gly Arg Phe Thr Gly Lys Lys
            290   295   300

Asn Asn Ser Ser Ala Ser Ile Pro Pro Leu Gln Asp Val Leu Leu Phe
305   310   315   320

Thr Pro Ala Ser Thr Glu Pro Gln Ser Leu Met Glu Trp Phe Asp Ile
            325   330   335

Cys Tyr Ala Gln Leu Val Ser Gly Asp Thr Pro Ala Asp Phe Trp Lys
            340   345   350

Arg Arg Pro Leu Ser Ile Val Pro Arg His Tyr Ala Glu Ser Pro Ser
            355   360   365

Pro Leu Ile Val Val Ser Tyr Asn Gly Ser Ser Ala Trp Gly Gly Arg
370   375   380

Ile Thr Gly Ser Pro Ile Leu Tyr His Ser Ala Gln Ala Ile Ile Asp
385   390   395   400

Ala Ala Cys Ile Asn Ala Arg Val Asp Asn Pro Gln Ser Leu His Val
            405   410   415

Thr Ala Arg Gln Glu Leu Val Ala Arg Leu Pro Phe Leu Ala Asn Val
            420   425   430

Leu Asn Asn Gln Thr Pro Leu Pro Ala Phe Lys Pro Gly Ala Glu Met
            435   440   445

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Phe Leu Asn Gln Val Phe Lys Gln Ala Cys Val Thr Ser Leu Thr Gln
    450                 455             460

Gly Leu Ile Thr Glu Leu Gln Thr Asn Pro Thr Leu Gln Gln Leu Met
465                 470             475                 480

Glu Tyr Asp Ile Ala Asp Ser Ser Gln Thr Val Ile Asp Glu Ile Val
            485             490                 495

Ala Arg Thr Pro Asp Leu Ile Gln Thr Ile Val Ser Val Leu Thr Glu
            500             505                 510

Met Ser Met Asp Ala Phe Tyr Asn Ser Ser Leu Met Tyr Ala Val Leu
        515             520                 525

Ala Tyr Leu Ser Ser Val Tyr Thr Arg Pro Gln Gly Gly Gly Tyr Ile
    530             535                 540

Pro Tyr Leu His Ala Ser Phe Pro Cys Trp Leu Gly Asn Arg Ser Ile
545             550                 555                 560

Tyr Leu Phe Asp Tyr Tyr Asn Ser Gly Gly Glu Ile Leu Lys Leu Ser
            565             570                 575

Lys Val Pro Val Pro Val Ala Leu Glu Lys Val Gly Ile Gly Asn Ser
        580             585                 590

Thr Gln Leu Arg Gly Lys Phe Ile Arg Ser Ala Asp Ile Val Asp Ile
        595             600                 605

Gly Ile Cys Ser Lys Tyr Leu Pro Gly Gln Cys Tyr Ala Tyr Ile Cys
    610             615                 620

Leu Gly Phe Asn Gln Gln Leu Gln Ser Ile Leu Val Leu Pro Gly Gly
625             630                 635                 640

Phe Ala Ala Cys Phe Cys Ile Thr Asp Thr Leu Gln Ala Ala Leu Pro
            645             650                 655

Ala Ser Leu Ile Gly Pro Ile Leu Asp Arg Phe Cys Phe Ser Ile Pro
            660             665                 670

Asn Pro His Lys
            675
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<210> 31
<211> 363
<212> PRT
<213> Varicella zoster

<400> 31

Met Glu Leu Gln Arg Ile Phe Pro Leu Tyr Thr Ala Thr Gly Ala Ala
1   5   10   15

Arg Lys Leu Thr Pro Glu Ala Val Gln Arg Leu Cys Asp Ala Leu Thr
            20   25   30

Leu Asp Met Gly Leu Trp Lys Ser Ile Leu Thr Asp Pro Arg Val Lys
        35   40   45

Ile Met Arg Ser Thr Ala Phe Ile Thr Leu Arg Ile Ala Pro Phe Ile
        50   55   60

Pro Leu Gln Thr Asp Thr Thr Asn Ile Ala Val Val Val Ala Thr Ile
65   70   75   80

Tyr Ile Thr Arg Pro Arg Gln Met Asn Leu Pro Pro Lys Thr Phe His
                85   90   95

Val Ile Val Asn Phe Asn Tyr Glu Val Ser Tyr Ala Met Thr Ala Thr
            100   105   110

Leu Arg Ile Tyr Pro Val Glu Asn Ile Asp His Val Phe Gly Ala Thr
            115   120   125

Phe Lys Asn Pro Ile Ala Tyr Pro Leu Pro Thr Ser Ile Pro Asp Pro
    130   135   140

Arg Ala Asp Pro Thr Pro Ala Asp Leu Thr Pro Thr Pro Asn Leu Ser
145   150   155   160

Asn Tyr Leu Gln Pro Pro Arg Leu Pro Lys Asn Pro Tyr Ala Cys Lys
                165   170   175

Val Ile Ser Pro Gly Val Trp Trp Ser Asp Glu Arg Arg Arg Leu Tyr
            180   185   190

Val Leu Ala Met Glu Pro Asn Leu Ile Gly Leu Cys Pro Ala Gly Trp
            195   200   205

His Ala Arg Ile Leu Gly Ser Val Leu Asn Arg Leu Leu Ser His Ala

Asp Gly Cys Asp Glu Cys Asn His Arg Val His Val Gly Ala Leu Tyr
225   230   235   240

Ala Leu Pro His Val Thr Asn His Ala Glu Gly Cys Val Cys Trp Ala
                    245   250   255

Pro Cys Met Trp Arg Lys Ala Gly Gln Arg Glu Leu Lys Val Glu Val
                    260   265   270

Asp Ile Gly Ala Thr Gln Val Leu Phe Val Asp Val Thr Thr Cys Ile
                    275   280   285

Arg Ile Thr Ser Thr Lys Asn Pro Arg Ile Thr Ala Asn Leu Gly Asp
                    290   295   300

Val Ile Ala Gly Thr Asn Ala Ser Gly Leu Ser Val Pro Val Asn Ser
305   310   315   320

Ser Gly Trp Gln Leu Tyr Met Phe Gly Glu Thr Leu Ser Arg Ala Ile
                    325   330   335

Ile Asn Gly Cys Gly Leu Leu Gln Arg Ile Cys Phe Pro Glu Thr Gln
                    340   345   350

Arg Leu Ser Gly Glu Pro Glu Pro Thr Thr Thr
                    355   360

<210> 32
<211> 199
<212> PRT
<213> Varicella zoster

<400> 32

Met Ser Gly His Thr Pro Thr Tyr Ala Ser His Arg Arg Asn Arg Val
1   5   10   15

Lys Leu Val Glu Ala His Asn Arg Ala Gly Leu Phe Lys Glu Arg Thr
                    20   25   30

Leu Asp Leu Ile Arg Gly Gly Ala Ser Val Gln Asp Pro Ala Phe Val
                    35   40   45

Tyr Ala Phe Thr Ala Ala Lys Glu Ala Cys Ala Asp Leu Asn Asn Gln
                    50   55   60

Leu Arg Ser Ala Ala Arg Ile Ala Ser Val Glu Gln Lys Ile Arg Asp
65   70   75   80

Ile Gln Ser Lys Val Glu Glu Gln Thr Ser Ile Gln Gln Ile Leu Asn
                 85   90   95

Thr Asn Arg Arg Tyr Ile Ala Pro Asp Phe Ile Arg Gly Leu Asp Lys
              100   105   110

Thr Glu Asp Asp Asn Thr Asp Asn Ile Asp Arg Leu Glu Asp Ala Val
              115   120   125

Gly Pro Asn Ile Glu His Glu Asn His Thr Trp Phe Gly Glu Asp Asp
         130   135   140

Glu Ala Leu Leu Thr Gln Trp Met Leu Thr Thr His Pro Pro Thr Ser
145   150   155   160

Lys Tyr Leu Gln Leu Gln Asp Leu Cys Val Pro Thr Thr Ile Pro Thr
              165   170   175

Asp Met Asn Gln Met Gln Pro Gln Pro Ile Ser Lys Asn Glu Asn Pro
              180   185   190

Pro Thr Pro His Thr Asp Val
         195

<210>   33
<211>   551
<212>   PRT
<213>   Varicella zoster

<400>   33

Met Ala Arg Ser Gly Leu Asp Arg Ile Asp Ile Ser Pro Gln Pro Ala
1   5   10   15

Lys Lys Ile Ala Arg Val Gly Gly Leu Gln His Pro Phe Val Lys Thr
              20   25   30

Asp Ile Asn Thr Ile Asn Val Glu His His Phe Ile Asp Thr Leu Gln
         35   40   45

Lys Thr Ser Pro Asn Met Asp Cys Arg Gly Met Thr Ala Gly Ile Phe
         50   55   60

Ile Arg Leu Ser His Met Tyr Lys Ile Leu Thr Thr Leu Glu Ser Pro
65   70   75   80

Asn Asp Val Thr Tyr Thr Thr Pro Gly Ser Thr Asn Ala Leu Phe Phe
                85   90   95

Lys Thr Ser Thr Gln Pro Gln Glu Pro Arg Pro Glu Glu Leu Ala Ser
            100   105   110

Lys Leu Thr Gln Asp Asp Ile Lys Arg Ile Leu Leu Thr Ile Glu Ser
            115   120   125

Glu Thr Arg Gly Gln Gly Asp Asn Ala Ile Trp Thr Leu Leu Arg Arg
        130   135   140

Asn Leu Ile Thr Ala Ser Thr Leu Lys Trp Ser Val Ser Gly Pro Val
145   150   155   160

Ile Pro Pro Gln Trp Phe Tyr His His Asn Thr Thr Asp Thr Tyr Gly
                165   170   175

Asp Ala Ala Ala Met Ala Phe Gly Lys Thr Asn Glu Pro Ala Ala Arg
                180   185   190

Ala Ile Val Glu Ala Leu Phe Ile Asp Pro Ala Asp Ile Arg Thr Pro
                195   200   205

Asp His Leu Thr Pro Glu Ala Thr Thr Lys Phe Phe Asn Phe Asp Met
        210   215   220

Leu Asn Thr Lys Ser Pro Ser Leu Leu Val Gly Thr Pro Arg Ile Gly
225   230   235   240

Thr Tyr Glu Cys Gly Leu Leu Ile Asp Val Arg Thr Gly Leu Ile Gly
                245   250   255

Ala Ser Leu Asp Val Leu Val Cys Asp Arg Asp Pro Leu Thr Gly Thr
                260   265   270

Leu Asn Pro His Pro Ala Glu Thr Asp Ile Ser Phe Phe Glu Ile Lys
                275   280   285

Cys Arg Ala Lys Tyr Leu Phe Asp Pro Asp Asp Lys Asn Asn Pro Leu
                290   295   300

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Gly Arg Thr Tyr Thr Thr Leu Ile Asn Arg Pro Thr Met Ala Asn Leu
305             310             315                 320

Arg Asp Phe Leu Tyr Thr Ile Lys Asn Pro Cys Val Ser Phe Phe Gly
                325             330                 335

Pro Ser Ala Asn Pro Ser Thr Arg Glu Ala Leu Ile Thr Asp His Val
            340             345                 350

Glu Trp Lys Arg Leu Gly Phe Lys Gly Gly Arg Ala Leu Thr Glu Leu
            355             360                 365

Asp Ala His His Leu Gly Leu Asn Arg Thr Ile Ser Ser Arg Val Trp
    370             375                 380

Val Phe Asn Asp Pro Asp Ile Gln Lys Gly Thr Ile Thr Thr Ile Ala
385             390                 395                 400

Trp Ala Thr Gly Asp Thr Ala Leu Gln Ile Pro Val Phe Ala Asn Pro
            405             410                 415

Arg His Ala Asn Phe Lys Gln Ile Ala Val Gln Thr Tyr Val Leu Ser
            420             425                 430

Gly Tyr Phe Pro Ala Leu Lys Leu Arg Pro Phe Leu Val Thr Phe Ile
        435             440                 445

Gly Arg Val Arg Arg Pro His Glu Val Gly Val Pro Leu Arg Val Asp
    450             455                 460

Thr Gln Ala Ala Ala Ile Tyr Glu Tyr Asn Trp Pro Thr Ile Pro Pro
465             470             475                 480

His Cys Ala Val Pro Val Ile Ala Val Leu Thr Pro Ile Glu Val Asp
            485             490                 495

Val Pro Arg Val Thr Gln Ile Leu Lys Asp Thr Gly Asn Asn Ala Ile
            500             505                 510

Thr Ser Ala Leu Arg Ser Leu Arg Trp Asp Asn Leu His Pro Ala Val
            515             520                 525

Glu Glu Glu Ser Val Asp Cys Ala Asn Gly Thr Thr Ser Leu Leu Arg
            530             535                 540
```

Ala Thr Glu Lys Pro Leu Leu
545   550

<210> 34
<211> 835
<212> PRT
<213> Varicella zoster

<400> 34

Met Ser Pro Asn Thr Gly Glu Ser Asn Ala Ala Val Tyr Ala Ser Ser
1   5   10   15

Thr Gln Leu Ala Arg Ala Leu Tyr Gly Gly Asp Leu Val Ser Trp Ile
            20   25   30

Lys His Thr His Pro Gly Ile Ser Leu Glu Leu Gln Leu Asp Val Pro
            35   40   45

Val Lys Leu Ile Lys Pro Gly Met Ser Gln Thr Arg Pro Val Thr Val
        50   55   60

Val Arg Ala Pro Met Gly Ser Gly Lys Thr Thr Ala Leu Leu Glu Trp
65   70   75   80

Leu Gln His Ala Leu Lys Ala Asp Ile Ser Val Leu Val Val Ser Cys
                85   90   95

Arg Arg Ser Phe Thr Gln Thr Leu Ile Gln Arg Phe Asn Asp Ala Gly
                100   105   110

Leu Ser Gly Phe Val Thr Tyr Leu Thr Ser Glu Thr Tyr Ile Met Gly
                115   120   125

Phe Lys Arg Leu Ile Val Gln Leu Glu Ser Leu His Arg Val Ser Ser
        130   135   140

Glu Ala Ile Asp Ser Tyr Asp Val Leu Ile Leu Asp Glu Val Met Ser
145   150   155   160

Val Ile Gly Gln Leu Tyr Ser Pro Thr Met Arg Arg Leu Ser Ala Val
                165   170   175

Asp Ser Leu Leu Tyr Arg Leu Leu Asn Arg Cys Ser Gln Ile Ile Ala
            180   185   190

Met Asp Ala Thr Val Asn Ser Gln Phe Ile Asp Leu Ile Ser Gly Leu
            195   200   205

Arg Gly Asp Glu Asn Ile His Thr Ile Val Cys Thr Tyr Ala Gly Val
            210   215   220

Gly Phe Ser Gly Arg Thr Cys Thr Ile Leu Arg Asp Met Gly Ile Asp
225   230   235   240

Thr Leu Val Arg Val Ile Lys Arg Ser Pro Glu His Glu Asp Val Arg
                    245   250   255

Thr Ile His Gln Leu Arg Gly Thr Phe Phe Asp Glu Leu Ala Leu Arg
                    260   265   270

Leu Gln Cys Gly His Asn Ile Cys Ile Phe Ser Ser Thr Leu Ser Phe
            275   280   285

Ser Glu Leu Val Ala Gln Phe Cys Ala Ile Phe Thr Asp Ser Ile Leu
            290   295   300

Ile Leu Asn Ser Thr Arg Pro Leu Cys Asn Val Asn Glu Trp Lys His
305   310   315   320

Phe Arg Val Leu Val Tyr Thr Thr Val Val Thr Val Gly Leu Ser Phe
                    325   330   335

Asp Met Ala His Phe His Ser Met Phe Ala Tyr Ile Lys Pro Met Ser
            340   345   350

Tyr Gly Pro Asp Met Val Ser Val Tyr Gln Ser Leu Gly Arg Val Arg
            355   360   365

Leu Leu Leu Leu Asn Glu Val Leu Met Tyr Val Asp Gly Ser Arg Thr
            370   375   380

Arg Cys Gly Pro Leu Phe Ser Pro Met Leu Leu Asn Phe Thr Ile Ala
385   390   395   400

Asn Lys Phe Gln Trp Phe Pro Thr His Thr Gln Ile Thr Asn Lys Leu
                    405   410   415

Cys Cys Ala Phe Arg Gln Arg Cys Ala Asn Ala Phe Thr Arg Ser Asn
            420   425   430

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Thr His Leu Phe Ser Arg Phe Lys Tyr Lys His Leu Phe Glu Arg Cys
    435                 440             445

Ser Leu Trp Ser Leu Ala Asp Ser Ile Asn Ile Leu Gln Thr Leu Leu
    450                 455             460

Ala Ser Asn Gln Ile Leu Val Val Leu Asp Gly Met Gly Pro Ile Thr
465                 470             475                 480

Asp Val Ser Pro Val Gln Phe Cys Ala Phe Ile His Asp Leu Arg His
                485             490             495

Ser Ala Asn Ala Val Ala Ser Cys Met Arg Ser Leu Arg Gln Asp Asn
            500             505             510

Asp Ser Cys Leu Thr Asp Phe Gly Pro Ser Gly Phe Met Ala Asp Asn
    515             520             525

Ile Thr Ala Phe Met Glu Lys Tyr Leu Met Glu Ser Ile Asn Thr Glu
    530             535             540

Glu Gln Ile Lys Val Phe Lys Ala Leu Ala Cys Pro Ile Glu Gln Pro
545             550             555             560

Arg Leu Val Asn Thr Ala Ile Leu Gly Ala Cys Ile Arg Ile Pro Glu
            565             570             575

Ala Leu Glu Ala Phe Asp Val Phe Gln Lys Ile Tyr Thr His Tyr Ala
            580             585             590

Ser Gly Trp Phe Pro Val Leu Asp Lys Thr Gly Glu Phe Ser Ile Ala
    595             600             605

Thr Ile Thr Thr Ala Pro Asn Leu Thr Thr His Trp Glu Leu Phe Arg
    610             615             620

Arg Cys Ala Tyr Ile Ala Lys Thr Leu Lys Trp Asn Pro Ser Thr Glu
625             630             635             640

Gly Cys Val Thr Gln Val Leu Asp Thr Asp Ile Asn Thr Leu Phe Asn
                645             650             655

Gln His Gly Asp Ser Leu Ala Gln Leu Ile Phe Glu Val Met Arg Cys
            660             665             670
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Asn Val Thr Asp Ala Lys Ile Ile Leu Asn Arg Pro Val Trp Arg Thr
            675   680   685

Thr Gly Phe Leu Asp Gly Cys His Asn Gln Cys Phe Arg Pro Ile Pro
            690   695   700

Thr Lys His Glu Tyr Asn Ile Ala Leu Phe Arg Leu Ile Trp Glu Gln
705   710   715   720

Leu Phe Gly Ala Arg Val Thr Lys Ser Thr Gln Thr Phe Pro Gly Ser
                725   730   735

Thr Arg Val Lys Asn Leu Lys Lys Lys Asp Leu Glu Thr Leu Leu Asp
            740   745   750

Ser Ile Asn Val Asp Arg Ser Ala Cys Arg Thr Tyr Arg Gln Leu Tyr
            755   760   765

Asn Leu Leu Met Ser Gln Arg His Ser Phe Ser Gln Gln Arg Tyr Lys
            770   775   780

Ile Thr Ala Pro Ala Trp Ala Arg His Val Tyr Phe Gln Ala His Gln
785   790   795   800

Met His Leu Ala Pro His Ala Glu Ala Met Leu Gln Leu Ala Leu Ser
                805   810   815

Glu Leu Ser Pro Gly Ser Trp Pro Arg Ile Asn Gly Ala Val Asn Phe
                820   825   830

Glu Ser Leu
        835

<210>   35
<211>   771
<212>   PRT
<213>   Varicella zoster

<400>   35

Met Asp Ala Thr Gln Ile Thr Leu Val Arg Glu Ser Gly His Ile Cys
1   5   10   15

Ala Ala Ser Ile Tyr Thr Ser Trp Thr Gln Ser Gly Gln Leu Thr Gln
                20   25   30

Asn Gly Leu Ser Val Leu Tyr Tyr Leu Leu Cys Lys Asn Ser Cys Gly

35   40   45

Lys Tyr Val Pro Lys Phe Ala Glu Ile Thr Val Gln Gln Glu Asp Leu
    50   55   60

Cys Arg Tyr Ser Arg His Gly Gly Ser Val Ser Ala Ala Thr Phe Ala
65   70   75   80

Ser Ile Cys Arg Ala Ala Ser Ser Ala Ala Leu Asp Ala Trp Pro Leu
                85   90   95

Glu Pro Leu Gly Asn Ala Asp Thr Trp Arg Cys Leu His Gly Thr Ala
            100   105   110

Leu Ala Thr Leu Arg Arg Val Leu Gly Phe Lys Ser Phe Tyr Ser Pro
            115   120   125

Val Thr Phe Glu Thr Asp Thr Asn Thr Gly Leu Leu Leu Lys Thr Ile
    130   135   140

Pro Asp Glu His Ala Leu Asn Asn Asp Asn Thr Pro Ser Thr Gly Val
145   150   155   160

Leu Arg Ala Asn Phe Pro Val Ala Ile Asp Val Ser Ala Val Ser Ala
                165   170   175

Cys Asn Ala His Thr Gln Gly Thr Ser Leu Ala Tyr Ala Arg Leu Thr
            180   185   190

Ala Leu Lys Ser Asn Gly Asp Thr Gln Gln Thr Pro Leu Asp Val
            195   200   205

Glu Val Ile Thr Pro Lys Ala Tyr Ile Arg Arg Lys Tyr Lys Ser Thr
    210   215   220

Phe Ser Pro Pro Ile Glu Arg Glu Gly Gln Thr Ser Asp Leu Phe Asn
225   230   235   240

Leu Glu Glu Arg Arg Leu Val Leu Ser Gly Asn Arg Ala Ile Val Val
                245   250   255

Arg Val Leu Leu Pro Cys Tyr Phe Asp Cys Leu Thr Thr Asp Ser Thr
            260   265   270

Val Thr Ser Ser Leu Ser Ile Leu Ala Thr Tyr Arg Leu Trp Tyr Ala

Ala Ala Phe Gly Lys Pro Gly Val Val Arg Pro Ile Phe Ala Tyr Leu
        290   295   300

Gly Pro Glu Leu Asn Pro Lys Gly Glu Asp Arg Asp Tyr Phe Cys Thr
305   310   315   320

Val Gly Phe Pro Gly Trp Thr Thr Leu Arg Thr Gln Thr Pro Ala Val
                325   330   335

Glu Ser Ile Arg Thr Ala Thr Glu Met Tyr Met Glu Thr Asp Gly Leu
                340   345   350

Trp Pro Val Thr Gly Ile Gln Ala Phe His Tyr Leu Ala Pro Trp Gly
        355   360   365

Gln His Pro Pro Leu Pro Pro Arg Val Gln Asp Leu Ile Gly Gln Ile
        370   375   380

Pro Gln Asp Thr Gly His Ala Asp Ala Thr Val Asn Trp Asp Ala Gly
385   390   395   400

Arg Ile Ser Thr Val Phe Lys Gln Pro Val Gln Leu Gln Asp Arg Trp
                405   410   415

Met Ala Lys Phe Asp Phe Ser Ala Phe Phe Pro Thr Ile Tyr Cys Ala
                420   425   430

Met Phe Pro Met His Phe Arg Leu Gly Lys Ile Val Leu Ala Arg Met
        435   440   445

Arg Arg Gly Met Gly Cys Leu Lys Pro Ala Leu Val Ser Phe Phe Gly
        450   455   460

Gly Leu Arg His Ile Leu Pro Ser Ile Tyr Lys Ala Ile Ile Phe Ile
465   470   475   480

Ala Asn Glu Ile Ser Leu Cys Val Glu Gln Thr Ala Leu Glu Gln Gly
                485   490   495

Phe Ala Ile Cys Thr Tyr Ile Lys Asp Gly Phe Trp Gly Ile Phe Thr
                500   505   510

Asp Leu His Thr Arg Asn Val Cys Ser Asp Gln Ala Arg Cys Ser Ala

Leu Asn Leu Ala Ala Thr Cys Glu Arg Ala Val Thr Gly Leu Leu Arg
530   535   540

Ile Gln Leu Gly Leu Asn Phe Thr Pro Ala Met Glu Pro Val Leu Arg
545   550   555   560

Val Glu Gly Val Tyr Thr His Ala Phe Thr Trp Cys Thr Thr Gly Ser
565   570   575

Trp Leu Trp Asn Leu Gln Thr Asn Thr Pro Pro Asp Leu Val Gly Val
580   585   590

Pro Trp Arg Ser Gln Ala Ala Arg Asp Leu Lys Glu Arg Leu Ser Gly
595   600   605

Leu Leu Cys Thr Ala Thr Lys Ile Arg Glu Arg Ile Gln Glu Asn Cys
610   615   620

Ile Trp Asp His Val Leu Tyr Asp Ile Trp Ala Gly Gln Val Val Glu
625   630   635   640

Ala Ala Arg Lys Thr Tyr Val Asp Phe Phe Glu His Val Phe Asp Arg
645   650   655

Arg Tyr Thr Pro Val Tyr Trp Ser Leu Gln Glu Gln Asn Ser Glu Thr
660   665   670

Lys Ala Ile Pro Ala Ser Tyr Leu Thr Tyr Gly His Met Gln Asp Lys
675   680   685

Asp Tyr Lys Pro Arg Gln Ile Ile Met Val Arg Asn Pro Asn Pro His
690   695   700

Gly Pro Pro Thr Val Val Tyr Trp Glu Leu Leu Pro Ser Cys Ala Cys
705   710   715   720

Ile Pro Pro Ile Asp Cys Ala Ala His Leu Lys Pro Leu Ile His Thr
725   730   735

Phe Val Thr Ile Ile Asn His Leu Leu Asp Ala His Asn Asp Phe Ser
740   745   750

Ser Pro Ser Leu Lys Phe Thr Asp Asp Pro Leu Ala Ser Tyr Asn Phe

Leu Phe Leu
    770

<210> 36
<211> 881
<212> PRT
<213> Varicella zoster

<400> 36

Met Lys Arg Ser Ile Ser Val Asp Ser Ser Ser Pro Lys Asn Val Phe
1   5   10   15

Asn Pro Glu Thr Pro Asn Gly Phe Asp Asp Ser Val Tyr Leu Asn Phe
            20   25   30

Thr Ser Met His Ser Ile Gln Pro Ile Leu Ser Arg Ile Arg Glu Leu
        35   40   45

Ala Ala Ile Thr Ile Pro Lys Glu Arg Val Pro Arg Leu Cys Trp Phe
    50   55   60

Lys Gln Leu Leu Glu Leu Gln Ala Pro Pro Glu Met Gln Arg Asn Glu
65   70   75   80

Leu Pro Phe Ser Val Tyr Leu Ile Ser Gly Asn Ala Gly Ser Gly Lys
                85   90   95

Ser Thr Cys Ile Gln Thr Leu Asn Glu Ala Ile Asp Cys Ile Ile Thr
            100   105   110

Gly Ser Thr Arg Val Ala Ala Gln Asn Val His Ala Lys Leu Ser Thr
        115   120   125

Ala Tyr Ala Ser Arg Pro Ile Asn Thr Ile Phe His Glu Phe Gly Phe
    130   135   140

Arg Gly Asn His Ile Gln Ala Gln Leu Gly Arg Tyr Ala Tyr Asn Trp
145   150   155   160

Thr Thr Thr Pro Pro Ser Ile Glu Asp Leu Gln Lys Arg Asp Ile Val
                165   170   175

Tyr Tyr Trp Glu Val Leu Ile Asp Ile Thr Lys Arg Val Phe Gln Met
            180   185   190

Gly Asp Asp Gly Arg Gly Gly Thr Ser Thr Phe Lys Thr Leu Trp Ala
        195   200   205

Ile Glu Arg Leu Leu Asn Lys Pro Thr Gly Ser Met Ser Gly Thr Ala
        210   215   220

Phe Ile Ala Cys Gly Ser Leu Pro Ala Phe Thr Arg Ser Asn Val Ile
225   230   235   240

Val Ile Asp Glu Ala Gly Leu Leu Gly Arg His Ile Leu Thr Ala Val
                245   250   255

Val Tyr Cys Trp Trp Leu Leu Asn Ala Ile Tyr Gln Ser Pro Gln Tyr
                260   265   270

Ile Asn Gly Arg Lys Pro Val Ile Val Cys Val Gly Ser Pro Thr Gln
        275   280   285

Thr Asp Ser Leu Glu Ser His Phe Gln His Asp Met Gln Arg Ser His
        290   295   300

Val Thr Pro Ser Glu Asn Ile Leu Thr Tyr Ile Ile Cys Asn Gln Thr
305   310   315   320

Leu Arg Gln Tyr Thr Asn Ile Ser His Asn Trp Ala Ile Phe Ile Asn
                325   330   335

Asn Lys Arg Cys Gln Glu Asp Asp Phe Gly Asn Leu Leu Lys Thr Leu
                340   345   350

Glu Tyr Gly Leu Pro Ile Thr Glu Ala His Ala Arg Leu Val Asp Thr
                355   360   365

Phe Val Val Pro Ala Ser Tyr Ile Asn Asn Pro Ala Asn Leu Pro Gly
        370   375   380

Trp Thr Arg Leu Tyr Ser Ser His Lys Glu Val Ser Ala Tyr Met Ser
385   390   395   400

Lys Leu His Ala His Leu Lys Leu Ser Lys Asn Asp His Phe Ser Val
                405   410   415

Phe Ala Leu Pro Thr Tyr Thr Phe Ile Arg Leu Thr Ala Phe Asp Glu
        420   425   430

Tyr Arg Lys Leu Thr Gly Gln Pro Gly Leu Ser Val Glu His Trp Ile
435   440   445

Arg Ala Asn Ser Gly Arg Leu His Asn Tyr Ser Gln Ser Arg Asp His
450   455   460

Asp Met Gly Thr Val Lys Tyr Glu Thr His Ser Asn Arg Asp Leu Ile
465   470   475   480

Val Ala Arg Thr Asp Ile Thr Tyr Val Leu Asn Ser Leu Val Val Val
                    485   490   495

Thr Thr Arg Leu Arg Lys Leu Val Ile Gly Phe Ser Gly Thr Phe Gln
            500   505   510

Ser Phe Ala Lys Val Leu Arg Asp Asp Ser Phe Val Lys Ala Arg Gly
            515   520   525

Glu Thr Ser Ile Glu Tyr Ala Tyr Arg Phe Leu Ser Asn Leu Ile Phe
    530   535   540

Gly Gly Leu Ile Asn Phe Tyr Asn Phe Leu Leu Asn Lys Asn Leu His
545   550   555   560

Pro Asp Lys Val Ser Leu Ala Tyr Lys Arg Leu Ala Ala Leu Thr Leu
                    565   570   575

Glu Leu Leu Ser Gly Thr Asn Lys Ala Pro Leu His Glu Ala Ala Val
            580   585   590

Asn Gly Ala Gly Ala Gly Ile Asp Cys Asp Gly Ala Ala Thr Ser Ala
            595   600   605

Asp Lys Ala Phe Cys Phe Thr Lys Ala Pro Glu Ser Lys Val Thr Ala
    610   615   620

Ser Ile Pro Glu Asp Pro Asp Asp Val Ile Phe Thr Ala Leu Asn Asp
625   630   635   640

Glu Val Ile Asp Leu Val Tyr Cys Gln Tyr Glu Phe Ser Tyr Pro Lys
                    645   650   655

Ser Ser Asn Glu Val His Ala Gln Phe Leu Leu Met Lys Ala Ile Tyr
            660   665   670

Asp Gly Arg Tyr Ala Ile Leu Ala Glu Leu Phe Glu Ser Ser Phe Thr
    675   680   685

Thr Ala Pro Phe Ser Ala Tyr Val Asp Asn Val Asn Phe Asn Gly Ser
    690   695   700

Glu Leu Leu Ile Gly Asn Val Arg Gly Gly Leu Leu Ser Leu Ala Leu
705   710   715   720

Gln Thr Asp Thr Tyr Thr Leu Leu Gly Tyr Thr Phe Ala Pro Val Pro
                725   730   735

Val Phe Val Glu Glu Leu Thr Arg Lys Lys Leu Tyr Arg Glu Thr Thr
            740   745   750

Glu Met Leu Tyr Ala Leu His Val Pro Leu Met Val Leu Gln Asp Gln
        755   760   765

His Gly Phe Val Ser Ile Val Asn Ala Asn Val Cys Glu Phe Thr Glu
    770   775   780

Ser Ile Glu Asp Ala Glu Leu Ala Met Ala Thr Thr Val Asp Tyr Gly
785   790   795   800

Leu Ser Ser Lys Leu Ala Met Thr Ile Ala Arg Ser Gln Gly Leu Ser
                805   810   815

Leu Glu Lys Val Ala Ile Cys Phe Thr Ala Asp Lys Leu Arg Leu Asn
                820   825   830

Ser Val Tyr Val Ala Met Ser Arg Thr Val Ser Ser Arg Phe Leu Lys
            835   840   845

Met Asn Leu Asn Pro Leu Arg Glu Arg Tyr Glu Lys Ser Ala Glu Ile
    850   855   860

Ser Asp His Ile Leu Ala Ala Leu Arg Asp Pro Asn Val His Val Val
865   870   875   880

Tyr

<210> 37
<211> 278

<212> PRT
<213> Varicella zoster

<400> 37

Met Phe Cys Thr Ser Pro Ala Thr Arg Gly Asp Ser Ser Glu Ser Lys
1   5   10   15

Pro Gly Ala Ser Val Asp Val Asn Gly Lys Met Glu Tyr Gly Ser Ala
            20   25   30

Pro Gly Pro Leu Asn Gly Arg Asp Thr Ser Arg Gly Pro Gly Ala Phe
            35   40   45

Cys Thr Pro Gly Trp Glu Ile His Pro Ala Arg Leu Val Glu Asp Ile
        50   55   60

Asn Arg Val Phe Leu Cys Ile Ala Gln Ser Ser Gly Arg Val Thr Arg
65   70   75   80

Asp Ser Arg Arg Leu Arg Arg Ile Cys Leu Asp Phe Tyr Leu Met Gly
                85   90   95

Arg Thr Arg Gln Arg Pro Thr Leu Ala Cys Trp Glu Glu Leu Leu Gln
            100   105   110

Leu Gln Pro Thr Gln Thr Gln Cys Leu Arg Ala Thr Leu Met Glu Val
            115   120   125

Ser His Arg Pro Pro Arg Gly Glu Asp Gly Phe Ile Glu Ala Pro Asn
    130   135   140

Val Pro Leu His Arg Ser Ala Leu Glu Cys Asp Val Ser Asp Asp Gly
145   150   155   160

Gly Glu Asp Asp Ser Asp Asp Asp Gly Ser Thr Pro Ser Asp Val Ile
                165   170   175

Glu Phe Arg Asp Ser Asp Ala Glu Ser Ser Asp Gly Glu Asp Phe Ile
            180   185   190

Val Glu Glu Glu Ser Glu Glu Ser Thr Asp Ser Cys Glu Pro Asp Gly
            195   200   205

Val Pro Gly Asp Cys Tyr Arg Asp Gly Asp Gly Cys Asn Thr Pro Ser
    210   215   220

```
Pro Lys Arg Pro Gln Arg Ala Ile Glu Arg Tyr Ala Gly Ala Glu Thr
225                 230             235                 240


Ala Glu Tyr Thr Ala Ala Lys Ala Leu Thr Ala Leu Gly Glu Gly Gly
                245             250                 255


Val Asp Trp Lys Arg Arg Arg His Glu Ala Pro Arg Arg His Asp Ile
            260             265                 270


Pro Pro Pro His Gly Val
        275


<210>  38
<211>  180
<212>  PRT
<213>  Varicella zoster

<400>  38

Met Asn Leu Cys Gly Ser Arg Gly Glu His Pro Gly Gly Glu Tyr Ala
1               5               10                  15


Gly Leu Tyr Cys Thr Arg His Asp Thr Pro Ala His Gln Ala Leu Met
                20              25                  30


Asn Asp Ala Glu Arg Tyr Phe Ala Ala Ala Leu Cys Ala Ile Ser Thr
            35                  40                  45


Glu Ala Tyr Glu Ala Phe Ile His Ser Pro Ser Glu Arg Pro Cys Ala
    50                  55                  60


Ser Leu Trp Gly Arg Ala Lys Asp Ala Phe Gly Arg Met Cys Gly Glu
65                  70              75                  80


Leu Ala Ala Asp Arg Gln Arg Pro Pro Ser Val Pro Pro Ile Arg Arg
                85                  90                  95


Ala Val Leu Ser Leu Leu Arg Glu Gln Cys Met Pro Asp Pro Gln Ser
                100             105                 110


His Leu Glu Leu Ser Glu Arg Leu Ile Leu Met Ala Tyr Trp Cys Cys
            115                 120                 125


Leu Gly His Ala Gly Leu Pro Thr Ile Gly Leu Ser Pro Asp Asn Lys
            130                 135                 140
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Cys Ile Arg Ala Glu Leu Tyr Asp Arg Pro Gly Gly Ile Cys His Arg
145   150   155   160

Leu Phe Asp Ala Tyr Leu Gly Cys Gly Ser Leu Gly Val Pro Arg Thr
                165   170   175

Tyr Glu Arg Ser
            180

<210> 39
<211> 393
<212> PRT
<213> Varicella zoster

<400> 39

Met Asn Asp Val Asp Ala Thr Asp Thr Phe Val Gly Gln Gly Lys Phe
1   5   10   15

Arg Gly Ala Ile Ser Thr Ser Pro Ser His Ile Met Gln Thr Cys Gly
                20   25   30

Phe Ile Gln Gln Met Phe Pro Val Glu Met Ser Pro Gly Ile Glu Ser
            35   40   45

Glu Asp Asp Pro Asn Tyr Asp Val Asn Met Asp Ile Gln Ser Phe Asn
        50   55   60

Ile Phe Asp Gly Val His Glu Thr Glu Ala Glu Ala Ser Val Ala Leu
65   70   75   80

Cys Ala Glu Ala Arg Val Gly Ile Asn Lys Ala Gly Phe Val Ile Leu
                85   90   95

Lys Thr Phe Thr Pro Gly Ala Glu Gly Phe Ala Phe Ala Cys Met Asp
                100   105   110

Ser Lys Thr Cys Glu His Val Val Ile Lys Ala Gly Gln Arg Gln Gly
            115   120   125

Thr Ala Thr Glu Ala Thr Val Leu Arg Ala Leu Thr His Pro Ser Val
        130   135   140

Val Gln Leu Lys Gly Thr Phe Thr Tyr Asn Lys Met Thr Cys Leu Ile
145   150   155   160

Leu Pro Arg Tyr Arg Thr Asp Leu Tyr Cys Tyr Leu Ala Ala Lys Arg

Asn Leu Pro Ile Cys Asp Ile Leu Ala Ile Gln Arg Ser Val Leu Arg
            180   185   190

Ala Leu Gln Tyr Leu His Asn Asn Ser Ile Ile His Arg Asp Ile Lys
            195   200   205

Ser Glu Asn Ile Phe Ile Asn His Pro Gly Asp Val Cys Val Gly Asp
            210   215   220

Phe Gly Ala Ala Cys Phe Pro Val Asp Ile Asn Ala Asn Arg Tyr Tyr
225   230   235   240

Gly Trp Ala Gly Thr Ile Ala Thr Asn Ser Pro Glu Leu Leu Ala Arg
                245   250   255

Asp Pro Tyr Gly Pro Ala Val Asp Ile Trp Ser Ala Gly Ile Val Leu
            260   265   270

Phe Glu Met Ala Thr Gly Gln Asn Ser Leu Phe Glu Arg Asp Gly Leu
            275   280   285

Asp Gly Asn Cys Asp Ser Glu Arg Gln Ile Lys Leu Ile Ile Arg Arg
290   295   300

Ser Gly Thr His Pro Asn Glu Phe Pro Ile Asn Pro Thr Ser Asn Leu
305   310   315   320

Arg Arg Gln Tyr Ile Gly Leu Ala Lys Arg Ser Ser Arg Lys Pro Gly
                325   330   335

Ser Arg Pro Leu Trp Thr Asn Leu Tyr Glu Leu Pro Ile Asp Leu Glu
            340   345   350

Tyr Leu Ile Cys Lys Met Leu Ser Phe Asp Ala Arg His Arg Pro Ser
            355   360   365

Ala Glu Val Leu Leu Asn His Ser Val Phe Gln Thr Leu Pro Asp Pro
            370   375   380

Tyr Pro Asn Pro Met Glu Val Gly Asp
385   390

<210> 40

<211> 354
<212> PRT
<213> Varicella zoster

<400> 40

Met Phe Leu Ile Gln Cys Leu Ile Ser Ala Val Ile Phe Tyr Ile Gln
1   5   10   15

Val Thr Asn Ala Leu Ile Phe Lys Gly Asp His Val Ser Leu Gln Val
            20   25   30

Asn Ser Ser Leu Thr Ser Ile Leu Ile Pro Met Gln Asn Asp Asn Tyr
            35   40   45

Thr Glu Ile Lys Gly Gln Leu Val Phe Ile Gly Glu Gln Leu Pro Thr
        50   55   60

Gly Thr Asn Tyr Ser Gly Thr Leu Glu Leu Leu Tyr Ala Asp Thr Val
65   70   75   80

Ala Phe Cys Phe Arg Ser Val Gln Val Ile Arg Tyr Asp Gly Cys Pro
                85   90   95

Arg Ile Arg Thr Ser Ala Phe Ile Ser Cys Arg Tyr Lys His Ser Trp
                100   105   110

His Tyr Gly Asn Ser Thr Asp Arg Ile Ser Thr Glu Pro Asp Ala Gly
            115   120   125

Val Met Leu Lys Ile Thr Lys Pro Gly Ile Asn Asp Ala Gly Val Tyr
        130   135   140

Val Leu Leu Val Arg Leu Asp His Ser Arg Ser Thr Asp Gly Phe Ile
145   150   155   160

Leu Gly Val Asn Val Tyr Thr Ala Gly Ser His His Asn Ile His Gly
                165   170   175

Val Ile Tyr Thr Ser Pro Ser Leu Gln Asn Gly Tyr Ser Thr Arg Ala
                180   185   190

Leu Phe Gln Gln Ala Arg Leu Cys Asp Leu Pro Ala Thr Pro Lys Gly
            195   200   205

Ser Gly Thr Ser Leu Phe Gln His Met Leu Asp Leu Arg Ala Gly Lys
            210   215   220

Ser Leu Glu Asp Asn Pro Trp Leu His Glu Asp Val Val Thr Thr Glu
225   230   235   240

Thr Lys Ser Val Val Lys Glu Gly Ile Glu Asn His Val Tyr Pro Thr
                245   250   255

Asp Met Ser Thr Leu Pro Glu Lys Ser Leu Asn Asp Pro Pro Glu Asn
                260   265   270

Leu Leu Ile Ile Ile Pro Ile Val Ala Ser Val Met Ile Leu Thr Ala
                275   280   285

Met Val Ile Val Ile Val Ile Ser Val Lys Arg Arg Arg Ile Lys Lys
                290   295   300

His Pro Ile Tyr Arg Pro Asn Thr Lys Thr Arg Arg Gly Ile Gln Asn
305   310   315   320

Ala Thr Pro Glu Ser Asp Val Met Leu Glu Ala Ala Ile Ala Gln Leu
                325   330   335

Ala Thr Ile Arg Glu Glu Ser Pro Pro His Ser Val Val Asn Pro Phe
                340   345   350

Val Lys

<210>   41
<211>   623
<212>   PRT
<213>   Varicella zoster

<400>   41

Met Gly Thr Val Asn Lys Pro Val Val Gly Val Leu Met Gly Phe Gly
1   5   10   15

Ile Ile Thr Gly Thr Leu Arg Ile Thr Asn Pro Val Arg Ala Ser Val
                20   25   30

Leu Arg Tyr Asp Asp Phe His Thr Asp Glu Asp Lys Leu Asp Thr Asn
                35   40   45

Ser Val Tyr Glu Pro Tyr Tyr His Ser Asp His Ala Glu Ser Ser Trp
50   55   60

Val Asn Arg Gly Glu Ser Ser Arg Lys Ala Tyr Asp His Asn Ser Pro
65   70   75   80

Tyr Ile Trp Pro Arg Asn Asp Tyr Asp Gly Phe Leu Glu Asn Ala His
            85   90   95

Glu His His Gly Val Tyr Asn Gln Gly Arg Gly Ile Asp Ser Gly Glu
            100   105   110

Arg Leu Met Gln Pro Thr Gln Met Ser Ala Gln Glu Asp Leu Gly Asp
        115   120   125

Asp Thr Gly Ile His Val Ile Pro Thr Leu Asn Gly Asp Asp Arg His
    130   135   140

Lys Ile Val Asn Val Asp Gln Arg Gln Tyr Gly Asp Val Phe Lys Gly
145   150   155   160

Asp Leu Asn Pro Lys Pro Gln Gly Gln Arg Leu Ile Glu Val Ser Val
            165   170   175

Glu Glu Asn His Pro Phe Thr Leu Arg Ala Pro Ile Gln Arg Ile Tyr
            180   185   190

Gly Val Arg Tyr Thr Glu Thr Trp Ser Phe Leu Pro Ser Leu Thr Cys
        195   200   205

Thr Gly Asp Ala Ala Pro Ala Ile Gln His Ile Cys Leu Lys His Thr
    210   215   220

Thr Cys Phe Gln Asp Val Val Val Asp Val Asp Cys Ala Glu Asn Thr
225   230   235   240

Lys Glu Asp Gln Leu Ala Glu Ile Ser Tyr Arg Phe Gln Gly Lys Lys
            245   250   255

Glu Ala Asp Gln Pro Trp Ile Val Val Asn Thr Ser Thr Leu Phe Asp
            260   265   270

Glu Leu Glu Leu Asp Pro Pro Glu Ile Glu Pro Gly Val Leu Lys Val
        275   280   285

Leu Arg Thr Glu Lys Gln Tyr Leu Gly Val Tyr Ile Trp Asn Met Arg
    290   295   300

Gly Ser Asp Gly Thr Ser Thr Tyr Ala Thr Phe Leu Val Thr Trp Lys
305   310   315   320

Gly Asp Glu Lys Thr Arg Asn Pro Thr Pro Ala Val Thr Pro Gln Pro
                325   330   335

Arg Gly Ala Glu Phe His Met Trp Asn Tyr His Ser His Val Phe Ser
            340   345   350

Val Gly Asp Thr Phe Ser Leu Ala Met His Leu Gln Tyr Lys Ile His
            355   360   365

Glu Ala Pro Phe Asp Leu Leu Leu Glu Trp Leu Tyr Val Pro Ile Asp
        370   375   380

Pro Thr Cys Gln Pro Met Arg Leu Tyr Ser Thr Cys Leu Tyr His Pro
385   390   395   400

Asn Ala Pro Gln Cys Leu Ser His Met Asn Ser Gly Cys Thr Phe Thr
            405   410   415

Ser Pro His Leu Ala Gln Arg Val Ala Ser Thr Val Tyr Gln Asn Cys
            420   425   430

Glu His Ala Asp Asn Tyr Thr Ala Tyr Cys Leu Gly Ile Ser His Met
        435   440   445

Glu Pro Ser Phe Gly Leu Ile Leu His Asp Gly Gly Thr Thr Leu Lys
    450   455   460

Phe Val Asp Thr Pro Glu Ser Leu Ser Gly Leu Tyr Val Phe Val Val
465   470   475   480

Tyr Phe Asn Gly His Val Glu Ala Val Ala Tyr Thr Val Val Ser Thr
            485   490   495

Val Asp His Phe Val Asn Ala Ile Glu Glu Arg Gly Phe Pro Pro Thr
        500   505   510

Ala Gly Gln Pro Pro Ala Thr Thr Lys Pro Lys Glu Ile Thr Pro Val
        515   520   525

Asn Pro Gly Thr Ser Pro Leu Leu Arg Tyr Ala Ala Trp Thr Gly Gly
        530   535   540

Leu Ala Ala Val Val Leu Leu Cys Leu Val Ile Phe Leu Ile Cys Thr
545   550   555   560

Ala Lys Arg Met Arg Val Lys Ala Tyr Arg Val Asp Lys Ser Pro Tyr
                565   570   575

Asn Gln Ser Met Tyr Tyr Ala Gly Leu Pro Val Asp Asp Phe Glu Asp
            580   585   590

Ser Glu Ser Thr Asp Thr Glu Glu Glu Phe Gly Asn Ala Ile Gly Gly
            595   600   605

Ser His Gly Gly Ser Ser Tyr Thr Val Tyr Ile Asp Lys Thr Arg
        610   615   620

<210>   42
<211>   1310
<212>   PRT
<213>   Varicella zoster

<400>   42

Met Asp Thr Pro Pro Met Gln Arg Ser Thr Pro Gln Arg Ala Gly Ser
1   5   10   15

Pro Asp Thr Leu Glu Leu Met Asp Leu Leu Asp Ala Ala Ala Ala Ala
            20   25   30

Ala Glu His Arg Ala Arg Val Val Thr Ser Ser Gln Pro Asp Asp Leu
            35   40   45

Leu Phe Gly Glu Asn Gly Val Met Val Gly Arg Glu His Glu Ile Val
        50   55   60

Ser Ile Pro Ser Val Ser Gly Leu Gln Pro Glu Pro Arg Thr Glu Asp
65   70   75   80

Val Gly Glu Glu Leu Thr Gln Asp Asp Tyr Val Cys Glu Asp Gly Gln
                85   90   95

Asp Leu Met Gly Ser Pro Val Ile Pro Leu Ala Glu Val Phe His Thr
            100   105   110

Arg Phe Ser Glu Ala Gly Ala Arg Glu Pro Thr Gly Ala Asp Arg Ser
        115   120   125

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Leu Glu Thr Val Ser Leu Gly Thr Lys Leu Ala Arg Ser Pro Lys Pro
    130                     135                 140


Pro Met Asn Asp Gly Glu Thr Gly Arg Gly Thr Thr Pro Pro Phe Pro
    145                     150                 155                 160


Gln Ala Phe Ser Pro Val Ser Pro Ala Ser Pro Val Gly Asp Ala Ala
                    165                     170                 175


Gly Asn Asp Gln Arg Glu Asp Gln Arg Ser Ile Pro Arg Gln Thr Thr
                180                     185                 190


Arg Gly Asn Ser Pro Gly Leu Pro Ser Val Val His Arg Asp Arg Gln
                195                     200                 205


Thr Gln Ser Ile Ser Gly Lys Lys Pro Gly Asp Glu Gln Ala Gly His
    210                     215                 220


Ala His Ala Ser Gly Asp Gly Val Val Leu Gln Lys Thr Gln Arg Pro
225                     230                     235                 240


Ala Gln Gly Lys Ser Pro Lys Lys Lys Thr Leu Lys Val Lys Val Pro
                    245                     250                 255


Leu Pro Ala Arg Lys Pro Gly Gly Pro Val Pro Gly Pro Val Glu Gln
                    260                     265                 270


Leu Tyr His Val Leu Ser Asp Ser Val Pro Ala Lys Gly Ala Lys Ala
                    275                     280                 285


Asp Leu Pro Phe Glu Thr Asp Asp Thr Arg Pro Arg Lys His Asp Ala
    290                     295                 300


Arg Gly Ile Thr Pro Arg Val Pro Gly Arg Ser Ser Gly Gly Lys Pro
305                     310                     315                 320


Arg Ala Phe Leu Ala Leu Pro Gly Arg Ser His Ala Pro Asp Pro Ile
                    325                     330                 335


Glu Asp Asp Ser Pro Val Glu Lys Lys Pro Lys Ser Arg Glu Phe Val
                340                     345                 350


Ser Ser Ser Ser Ser Ser Ser Ser Trp Gly Ser Ser Ser Glu Asp Glu
    355                     360                 365
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Asp Asp Glu Pro Arg Arg Val Ser Val Gly Ser Glu Thr Thr Gly Ser
370   375   380

Arg Ser Gly Arg Glu His Ala Pro Ser Pro Ser Asn Ser Asp Asp Ser
385   390   395   400

Asp Ser Asn Asp Gly Gly Ser Thr Lys Gln Asn Ile Gln Pro Gly Tyr
                405   410   415

Arg Ser Ile Ser Gly Pro Asp Pro Arg Ile Arg Lys Thr Lys Arg Leu
            420   425   430

Ala Gly Glu Pro Gly Arg Gln Arg Gln Lys Ser Phe Ser Leu Pro Arg
        435   440   445

Ser Arg Thr Pro Ile Ile Pro Pro Val Ser Gly Pro Leu Met Met Pro
    450   455   460

Asp Gly Ser Pro Trp Pro Gly Ser Ala Pro Leu Pro Ser Asn Arg Val
465   470   475   480

Arg Phe Gly Pro Ser Gly Glu Thr Arg Glu Gly His Trp Glu Asp Glu
            485   490   495

Ala Val Arg Ala Ala Arg Ala Arg Tyr Glu Ala Ser Thr Glu Pro Val
        500   505   510

Pro Leu Tyr Val Pro Glu Leu Gly Asp Pro Ala Arg Gln Tyr Arg Ala
        515   520   525

Leu Ile Asn Leu Ile Tyr Cys Pro Asp Arg Asp Pro Ile Ala Trp Leu
    530   535   540

Gln Asn Pro Lys Leu Thr Gly Val Asn Ser Ala Leu Asn Gln Phe Tyr
545   550   555   560

Gln Lys Leu Leu Pro Pro Gly Arg Ala Gly Thr Ala Val Thr Gly Ser
                565   570   575

Val Ala Ser Pro Val Pro His Val Gly Glu Ala Met Ala Thr Gly Glu
            580   585   590

Ala Leu Trp Ala Leu Pro His Ala Ala Ala Ala Val Ala Met Ser Arg
        595   600   605

Arg Tyr Asp Arg Ala Gln Lys His Phe Ile Leu Gln Ser Leu Arg Arg
610   615   620

Ala Phe Ala Ser Met Ala Tyr Pro Glu Ala Thr Gly Ser Ser Pro Ala
625   630   635   640

Ala Arg Ile Ser Arg Gly His Pro Ser Pro Thr Thr Pro Ala Thr Gln
                    645   650   655

Ala Pro Asp Pro Gln Pro Ser Ala Ala Ala Arg Ser Leu Ser Val Cys
                    660   665   670

Pro Pro Asp Asp Arg Leu Arg Thr Pro Arg Lys Arg Lys Ser Gln Pro
                    675   680   685

Val Glu Ser Arg Ser Leu Leu Asp Lys Ile Arg Glu Thr Pro Val Ala
690   695   700

Asp Ala Arg Val Ala Asp Asp His Val Val Ser Lys Ala Lys Arg Arg
705   710   715   720

Val Ser Glu Pro Val Thr Ile Thr Ser Gly Pro Val Val Asp Pro Pro
                    725   730   735

Ala Val Ile Thr Met Pro Leu Asp Gly Pro Ala Pro Asn Gly Gly Phe
                    740   745   750

Arg Arg Ile Pro Arg Gly Ala Leu His Thr Pro Val Pro Ser Asp Gln
                    755   760   765

Ala Arg Lys Ala Tyr Cys Thr Pro Glu Thr Ile Ala Arg Leu Val Asp
                    770   775   780

Asp Pro Leu Phe Pro Thr Ala Trp Arg Pro Ala Leu Ser Phe Asp Pro
785   790   795   800

Gly Ala Leu Ala Glu Ile Ala Ala Arg Arg Pro Gly Gly Gly Asp Arg
                    805   810   815

Arg Phe Gly Pro Pro Ser Gly Val Glu Ala Leu Arg Arg Arg Cys Ala
                    820   825   830

Trp Met Arg Gln Ile Pro Asp Pro Glu Asp Val Arg Leu Leu Ile Ile
835   840   845

Tyr Asp Pro Leu Pro Gly Glu Asp Ile Asn Gly Pro Leu Glu Ser Thr
    850   855   860

Leu Ala Thr Asp Pro Gly Pro Ser Trp Ser Pro Ser Arg Gly Gly Leu
865   870   875   880

Ser Val Val Leu Ala Ala Leu Ser Asn Arg Leu Cys Leu Pro Ser Thr
            885   890   895

His Ala Trp Ala Gly Asn Trp Thr Gly Pro Pro Asp Val Ser Ala Leu
            900   905   910

Asn Ala Arg Gly Val Leu Leu Leu Ser Thr Arg Asp Leu Ala Phe Ala
            915   920   925

Gly Ala Val Glu Tyr Leu Gly Ser Arg Leu Ala Ser Ala Arg Arg Arg
    930   935   940

Leu Leu Val Leu Asp Ala Val Ala Leu Glu Arg Trp Pro Arg Asp Gly
945   950   955   960

Pro Ala Leu Ser Gln Tyr His Val Tyr Val Arg Ala Pro Ala Arg Pro
            965   970   975

Asp Ala Gln Ala Val Val Arg Trp Pro Asp Ser Ala Val Thr Glu Gly
            980   985   990

Leu Ala Arg Ala Val Phe Ala Ser Ser Arg Thr Phe Gly Pro Ala Ser
    995   1000   1005

Phe Ala Arg Ile Glu Thr Ala Phe Ala Asn Leu Tyr Pro Gly Glu
    1010   1015   1020

Gln Pro Leu Cys Leu Cys Arg Gly Gly Asn Val Ala Tyr Thr Val
    1025   1030   1035

Cys Thr Arg Ala Gly Pro Lys Thr Arg Val Pro Leu Ser Pro Arg
    1040   1045   1050

Glu Tyr Arg Gln Tyr Val Leu Pro Gly Phe Asp Gly Cys Lys Asp
    1055   1060   1065

Leu Ala Arg Gln Ser Arg Gly Leu Gly Leu Gly Ala Ala Asp Phe
    1070   1075   1080

Val Asp Glu Ala Ala His Ser His Arg Ala Ala Asn Arg Trp Gly
    1085   1090   1095

Leu Gly Ala Ala Leu Arg Pro Val Phe Leu Pro Glu Gly Arg Arg
    1100   1105   1110

Pro Gly Ala Ala Gly Pro Glu Ala Gly Asp Val Pro Thr Trp Ala
    1115   1120   1125

Arg Val Phe Cys Arg His Ala Leu Leu Glu Pro Asp Pro Ala Ala
    1130   1135   1140

Glu Pro Leu Val Leu Pro Pro Val Ala Gly Arg Ser Val Ala Leu
    1145   1150   1155

Tyr Ala Ser Ala Asp Glu Ala Arg Asn Ala Leu Pro Pro Ile Pro
    1160   1165   1170

Arg Val Met Trp Pro Pro Gly Phe Gly Ala Ala Glu Thr Val Leu
    1175   1180   1185

Glu Gly Ser Asp Gly Thr Arg Phe Val Phe Gly His His Gly Gly
    1190   1195   1200

Ser Glu Arg Pro Ser Glu Thr Gln Ala Gly Arg Gln Arg Arg Thr
    1205   1210   1215

Ala Asp Asp Arg Glu His Ala Leu Glu Leu Asp Asp Trp Glu Val
    1220   1225   1230

Gly Cys Glu Asp Ala Trp Asp Ser Glu Glu Gly Gly Gly Asp Asp
    1235   1240   1245

Gly Asp Ala Pro Gly Ser Ser Phe Gly Val Ser Ile Val Ser Val
    1250   1255   1260

Ala Pro Gly Val Leu Arg Asp Arg Arg Val Gly Leu Arg Pro Ala
    1265   1270   1275

Val Lys Val Glu Leu Leu Ser Ser Ser Ser Ser Ser Glu Asp Glu
    1280   1285   1290

Asp Asp Val Trp Gly Gly Arg Gly Gly Arg Ser Pro Pro Gln Ser
    1295   1300   1305

Arg Gly
    1310

<210>   43
<211>   1002
<212>   DNA
<213>   Varicella zoster

<220>
<221>   CDS
<222>   (1)..(1002)

<400>   43
atg cat tta aag cct acc aga ttt ttc cac gca aac caa ccg cca atg   48
Met His Leu Lys Pro Thr Arg Phe Phe His Ala Asn Gln Pro Pro Met
1   5   10   15

ccg cat tca tac gag atg gag gac tta tgc ttc gac gac atg caa tat   96
Pro His Ser Tyr Glu Met Glu Asp Leu Cys Phe Asp Asp Met Gln Tyr
                20   25   30

cgc tgg tct ccc tcg aac aca ccc tat cga agt atg tct agg cga tat   144
Arg Trp Ser Pro Ser Asn Thr Pro Tyr Arg Ser Met Ser Arg Arg Tyr
            35   40   45

aaa tcc gta tct cgg agc ggg cct tcg atg cgt gta cgc tcc aga acg   192
Lys Ser Val Ser Arg Ser Gly Pro Ser Met Arg Val Arg Ser Arg Thr
        50   55   60

cca tgc cgc cgt caa acc att cga gga aaa ctt atg tca aag gag cgg   240
Pro Cys Arg Arg Gln Thr Ile Arg Gly Lys Leu Met Ser Lys Glu Arg
65   70   75   80

tct gtg tac cgc cat tat ttt aat tac atc gca agg tcc ccc cca gaa   288
Ser Val Tyr Arg His Tyr Phe Asn Tyr Ile Ala Arg Ser Pro Pro Glu
                85   90   95

gaa cta gct acc gtt aga ggc tta atc gtg cca att att aag acg acc   336
Glu Leu Ala Thr Val Arg Gly Leu Ile Val Pro Ile Ile Lys Thr Thr
                100   105   110

cct gtc acc ctt ccg ttt aac ttg ggt cag aca gtg gcg gat aac tgc   384
Pro Val Thr Leu Pro Phe Asn Leu Gly Gln Thr Val Ala Asp Asn Cys
                115   120   125

ctg tcg tta tcc gga atg ggt tat cat tta ggt ctc gga ggt tat tgt   432
Leu Ser Leu Ser Gly Met Gly Tyr His Leu Gly Leu Gly Gly Tyr Cys
        130   135   140

ccg aca tgc act gca tct gga gaa ccg cgt cta tgt cga acc gat cgg   480
Pro Thr Cys Thr Ala Ser Gly Glu Pro Arg Leu Cys Arg Thr Asp Arg
145   150   155   160

gcg gct ctg ata cta gca tat gtt cag cag ctt aac aac ata tac gaa   528
Ala Ala Leu Ile Leu Ala Tyr Val Gln Gln Leu Asn Asn Ile Tyr Glu
                165   170   175

tat cgt gtg ttt ctt gca tcc att ttg gcg cta tca gac cga gcc aac   576

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                Tyr Arg Val Phe Leu Ala Ser Ile Leu Ala Leu Ser Asp Arg Ala Asn
                        180                 185                 190

atg caa gca gcg tcc gct gaa ccc cta ttg tcg agc gta ttg gca caa          624
Met Gln Ala Ala Ser Ala Glu Pro Leu Leu Ser Ser Val Leu Ala Gln
        195                 200                 205

ccg gaa tta ttt ttt atg tat cat att atg agg gag ggg ggc atg cga          672
Pro Glu Leu Phe Phe Met Tyr His Ile Met Arg Glu Gly Gly Met Arg
        210                 215                 220

gat ata cgc gta ctt ttt tat cgt gat gga gat gcc gga ggg ttt atg          720
Asp Ile Arg Val Leu Phe Tyr Arg Asp Gly Asp Ala Gly Gly Phe Met
225                 230                 235                 240

atg tat gtt ata ttt ccg ggg aaa tct gtt cac ctc cat tac aga cta          768
Met Tyr Val Ile Phe Pro Gly Lys Ser Val His Leu His Tyr Arg Leu
                        245                 250                 255

atc gat cat ata cag gcc gcg tgt cgg ggg tat aaa ata gtc gca cac          816
Ile Asp His Ile Gln Ala Ala Cys Arg Gly Tyr Lys Ile Val Ala His
                        260                 265                 270

gtt tgg cag aca aca ttt tta ctg tcg gta tgt cgc aac cca gaa caa          864
Val Trp Gln Thr Thr Phe Leu Leu Ser Val Cys Arg Asn Pro Glu Gln
                275                 280                 285

caa aca gag act gtg gtg cca tcc att gga aca tcg gac gtt tac tgt          912
Gln Thr Glu Thr Val Val Pro Ser Ile Gly Thr Ser Asp Val Tyr Cys
        290                 295                 300

aaa atg tgt gac ctt aac ttt gat gga gaa ttg ctt ttg gaa tac aaa          960
Lys Met Cys Asp Leu Asn Phe Asp Gly Glu Leu Leu Leu Glu Tyr Lys
305                 310                 315                 320

aga ctc tac gca tta ttt gat gac ttt gtt cct cct cgg tga               1002
Arg Leu Tyr Ala Leu Phe Asp Asp Phe Val Pro Pro Arg
                        325                 330


<210>  44
<211>  333
<212>  PRT
<213>  Varicella zoster

<400>  44

Met His Leu Lys Pro Thr Arg Phe Phe His Ala Asn Gln Pro Pro Met
1                   5                   10                  15


Pro His Ser Tyr Glu Met Glu Asp Leu Cys Phe Asp Asp Met Gln Tyr
                    20                  25                  30


Arg Trp Ser Pro Ser Asn Thr Pro Tyr Arg Ser Met Ser Arg Arg Tyr
                35                  40                  45


Lys Ser Val Ser Arg Ser Gly Pro Ser Met Arg Val Arg Ser Arg Thr
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Pro Cys Arg Arg Gln Thr Ile Arg Gly Lys Leu Met Ser Lys Glu Arg
65   70   75   80

Ser Val Tyr Arg His Tyr Phe Asn Tyr Ile Ala Arg Ser Pro Pro Glu
                 85   90   95

Glu Leu Ala Thr Val Arg Gly Leu Ile Val Pro Ile Ile Lys Thr Thr
             100   105   110

Pro Val Thr Leu Pro Phe Asn Leu Gly Gln Thr Val Ala Asp Asn Cys
             115   120   125

Leu Ser Leu Ser Gly Met Gly Tyr His Leu Gly Leu Gly Gly Tyr Cys
         130   135   140

Pro Thr Cys Thr Ala Ser Gly Glu Pro Arg Leu Cys Arg Thr Asp Arg
145   150   155   160

Ala Ala Leu Ile Leu Ala Tyr Val Gln Gln Leu Asn Asn Ile Tyr Glu
                 165   170   175

Tyr Arg Val Phe Leu Ala Ser Ile Leu Ala Leu Ser Asp Arg Ala Asn
             180   185   190

Met Gln Ala Ala Ser Ala Glu Pro Leu Leu Ser Ser Val Leu Ala Gln
         195   200   205

Pro Glu Leu Phe Phe Met Tyr His Ile Met Arg Glu Gly Gly Met Arg
     210   215   220

Asp Ile Arg Val Leu Phe Tyr Arg Asp Gly Asp Ala Gly Gly Phe Met
225   230   235   240

Met Tyr Val Ile Phe Pro Gly Lys Ser Val His Leu His Tyr Arg Leu
                 245   250   255

Ile Asp His Ile Gln Ala Ala Cys Arg Gly Tyr Lys Ile Val Ala His
             260   265   270

Val Trp Gln Thr Thr Phe Leu Leu Ser Val Cys Arg Asn Pro Glu Gln
         275   280   285

Gln Thr Glu Thr Val Val Pro Ser Ile Gly Thr Ser Asp Val Tyr Cys

290   295   300

Lys Met Cys Asp Leu Asn Phe Asp Gly Glu Leu Leu Leu Glu Tyr Lys
305   310   315   320

Arg Leu Tyr Ala Leu Phe Asp Asp Phe Val Pro Pro Arg
                        325   330

<210>   45
<211>   1533
<212>   DNA
<213>   Varicella zoster

<220>
<221>   CDS
<222>   (1)..(1533)

<400>   45
atg gat gct gac gac aca ccc ccc aac ctc caa ata tct cca act gca   48
Met Asp Ala Asp Asp Thr Pro Pro Asn Leu Gln Ile Ser Pro Thr Ala
1   5   10   15

gga cct ttg cgt tcc cac cac aat acc gac gga cat gaa cca aat gca   96
Gly Pro Leu Arg Ser His His Asn Thr Asp Gly His Glu Pro Asn Ala
                20   25   30

acc gca gcc gat cag caa gaa cga gaa tcc acc aac ccc aca cac gga   144
Thr Ala Ala Asp Gln Gln Glu Arg Glu Ser Thr Asn Pro Thr His Gly
                35   40   45

tgt gta aat cat cca tgg gcc aat ccg tca act gca aca tgc atg gaa   192
Cys Val Asn His Pro Trp Ala Asn Pro Ser Thr Ala Thr Cys Met Glu
        50   55   60

tca cca gaa cga tca caa cag aca agc tta ttt tta tta aag cac ggc   240
Ser Pro Glu Arg Ser Gln Gln Thr Ser Leu Phe Leu Leu Lys His Gly
65   70   75   80

tta acg aga gat cca ata cat caa cgc gaa agg gtg gac gtt ttt cca   288
Leu Thr Arg Asp Pro Ile His Gln Arg Glu Arg Val Asp Val Phe Pro
                    85   90   95

caa ttt aac aaa ccc cca tgg gtt ttt aga att tcc aaa tta tcc cgt   336
Gln Phe Asn Lys Pro Pro Trp Val Phe Arg Ile Ser Lys Leu Ser Arg
                100   105   110

tta att gta ccc atc ttc acg ctc aat gaa cag tta tgt ttt tct aaa   384
Leu Ile Val Pro Ile Phe Thr Leu Asn Glu Gln Leu Cys Phe Ser Lys
                115   120   125

tta cag att cga gat aga ccc agg ttt gcg gga cgg gga acg tat ggg   432
Leu Gln Ile Arg Asp Arg Pro Arg Phe Ala Gly Arg Gly Thr Tyr Gly
        130   135   140

cgt gtt cat ata tac cca tcg tca aaa ata gct gta aaa acc atg gac   480
Arg Val His Ile Tyr Pro Ser Ser Lys Ile Ala Val Lys Thr Met Asp

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agt cgt gtt ttt aat aga gag tta att aac gcg att tta gcg agt gag    528
Ser Arg Val Phe Asn Arg Glu Leu Ile Asn Ala Ile Leu Ala Ser Glu
            165                 170                 175

ggt tct ata cga gca ggg gaa agg cta ggt att tct agc ata gtt tgc    576
Gly Ser Ile Arg Ala Gly Glu Arg Leu Gly Ile Ser Ser Ile Val Cys
            180                 185                 190

ctt tta ggt ttt tcg tta caa acc aaa cag cta ctg ttt ccg gca tac    624
Leu Leu Gly Phe Ser Leu Gln Thr Lys Gln Leu Leu Phe Pro Ala Tyr
            195                 200                 205

gac atg gat atg gat gaa tac att gtt cgc ctg tcc aga cgg ttg aca    672
Asp Met Asp Met Asp Glu Tyr Ile Val Arg Leu Ser Arg Arg Leu Thr
210                 215                 220

ata cct gat cac ata gac aga aaa att gcc cat gta ttt tta gat ttg    720
Ile Pro Asp His Ile Asp Arg Lys Ile Ala His Val Phe Leu Asp Leu
225                 230                 235                 240

gct caa gcg ttg acg ttt tta aat cga acg tgc ggc ctg acc cac cta    768
Ala Gln Ala Leu Thr Phe Leu Asn Arg Thr Cys Gly Leu Thr His Leu
            245                 250                 255

gat gtg aaa tgt ggc aat att ttt ctt aac gtc gac aac ttt gcc tcg    816
Asp Val Lys Cys Gly Asn Ile Phe Leu Asn Val Asp Asn Phe Ala Ser
            260                 265                 270

ttg gaa ata acc aca gca gta atc gga gac tat agc cta gta aca tta    864
Leu Glu Ile Thr Thr Ala Val Ile Gly Asp Tyr Ser Leu Val Thr Leu
            275                 280                 285

aat acg tat tcc ctt tgt act cga gcg ata ttt gaa gtt gga aat cca    912
Asn Thr Tyr Ser Leu Cys Thr Arg Ala Ile Phe Glu Val Gly Asn Pro
290                 295                 300

tcc cac ccg gag cac gta cta cgc gta ccc cgg gat gca tcg cag atg    960
Ser His Pro Glu His Val Leu Arg Val Pro Arg Asp Ala Ser Gln Met
305                 310                 315                 320

tca ttt cgt ttg gtg ttg agt cat gga aca aac caa ccc cct gaa atc    1008
Ser Phe Arg Leu Val Leu Ser His Gly Thr Asn Gln Pro Pro Glu Ile
            325                 330                 335

ttg ctt gat tat att aat gga acg ggc ctt act aaa tat act gga acc    1056
Leu Leu Asp Tyr Ile Asn Gly Thr Gly Leu Thr Lys Tyr Thr Gly Thr
            340                 345                 350

ttg ccc caa aga gtt gga ctt gcg att gat ctt tat gca ttg ggc caa    1104
Leu Pro Gln Arg Val Gly Leu Ala Ile Asp Leu Tyr Ala Leu Gly Gln
            355                 360                 365

gca ctc tta gaa gtt atc ctg cta gga cgt ctt ccc gga caa ctg ccc    1152
Ala Leu Leu Glu Val Ile Leu Leu Gly Arg Leu Pro Gly Gln Leu Pro
370                 375                 380

att tca gta cat cgg acc ccg cat tat cac tac tac ggt cat aag tta    1200
Ile Ser Val His Arg Thr Pro His Tyr His Tyr Tyr Gly His Lys Leu
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385   390   395   400

tca cca gat ttg gcg ctt gat acg ctg gca tat cga tgt gtc ctg gcg   1248
Ser Pro Asp Leu Ala Leu Asp Thr Leu Ala Tyr Arg Cys Val Leu Ala
            405   410   415

cca tat ata ctc cca tct gac atc ccc ggg gac tta aat tat aat ccc   1296
Pro Tyr Ile Leu Pro Ser Asp Ile Pro Gly Asp Leu Asn Tyr Asn Pro
            420   425   430

ttt ata cac gcc gga gag ctg aac acc cgt att tcc cgg aat tct tta   1344
Phe Ile His Ala Gly Glu Leu Asn Thr Arg Ile Ser Arg Asn Ser Leu
            435   440   445

cgc cgg ata ttc cag tgt cac gca gtg cgt tac ggc gta acg cac tca   1392
Arg Arg Ile Phe Gln Cys His Ala Val Arg Tyr Gly Val Thr His Ser
    450   455   460

aag ctt ttc gaa ggc ata cgc att ccg gcc tca tta tac cca gcc act   1440
Lys Leu Phe Glu Gly Ile Arg Ile Pro Ala Ser Leu Tyr Pro Ala Thr
465   470   475   480

gtt gtt aca tcg ttg ttg tgt cac gat aat tca gaa ata cgc tcg gat   1488
Val Val Thr Ser Leu Leu Cys His Asp Asn Ser Glu Ile Arg Ser Asp
                485   490   495

cac cct tta tta tgg cac gat cgg gat tgg ata gga tcg aca taa   1533
His Pro Leu Leu Trp His Asp Arg Asp Trp Ile Gly Ser Thr
                500   505   510

<210> 46
<211> 510
<212> PRT
<213> Varicella zoster

<400> 46

Met Asp Ala Asp Asp Thr Pro Pro Asn Leu Gln Ile Ser Pro Thr Ala
1   5   10   15

Gly Pro Leu Arg Ser His His Asn Thr Asp Gly His Glu Pro Asn Ala
            20   25   30

Thr Ala Ala Asp Gln Gln Glu Arg Glu Ser Thr Asn Pro Thr His Gly
        35   40   45

Cys Val Asn His Pro Trp Ala Asn Pro Ser Thr Ala Thr Cys Met Glu
    50   55   60

Ser Pro Glu Arg Ser Gln Gln Thr Ser Leu Phe Leu Leu Lys His Gly
65   70   75   80

Leu Thr Arg Asp Pro Ile His Gln Arg Glu Arg Val Asp Val Phe Pro
                85   90   95

```
Gln Phe Asn Lys Pro Pro Trp Val Phe Arg Ile Ser Lys Leu Ser Arg
            100                 105                 110

Leu Ile Val Pro Ile Phe Thr Leu Asn Glu Gln Leu Cys Phe Ser Lys
            115                 120                 125

Leu Gln Ile Arg Asp Arg Pro Arg Phe Ala Gly Arg Gly Thr Tyr Gly
            130                 135                 140

Arg Val His Ile Tyr Pro Ser Ser Lys Ile Ala Val Lys Thr Met Asp
145                 150                 155                 160

Ser Arg Val Phe Asn Arg Glu Leu Ile Asn Ala Ile Leu Ala Ser Glu
                    165                 170                 175

Gly Ser Ile Arg Ala Gly Glu Arg Leu Gly Ile Ser Ser Ile Val Cys
                    180                 185                 190

Leu Leu Gly Phe Ser Leu Gln Thr Lys Gln Leu Leu Phe Pro Ala Tyr
            195                 200                 205

Asp Met Asp Met Asp Glu Tyr Ile Val Arg Leu Ser Arg Arg Leu Thr
            210                 215                 220

Ile Pro Asp His Ile Asp Arg Lys Ile Ala His Val Phe Leu Asp Leu
225                 230                 235                 240

Ala Gln Ala Leu Thr Phe Leu Asn Arg Thr Cys Gly Leu Thr His Leu
                    245                 250                 255

Asp Val Lys Cys Gly Asn Ile Phe Leu Asn Val Asp Asn Phe Ala Ser
                    260                 265                 270

Leu Glu Ile Thr Thr Ala Val Ile Gly Asp Tyr Ser Leu Val Thr Leu
            275                 280                 285

Asn Thr Tyr Ser Leu Cys Thr Arg Ala Ile Phe Glu Val Gly Asn Pro
            290                 295                 300

Ser His Pro Glu His Val Leu Arg Val Pro Arg Asp Ala Ser Gln Met
305                 310                 315                 320

Ser Phe Arg Leu Val Leu Ser His Gly Thr Asn Gln Pro Pro Glu Ile
                    325                 330                 335
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Leu Leu Asp Tyr Ile Asn Gly Thr Gly Leu Thr Lys Tyr Thr Gly Thr
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Leu Pro Gln Arg Val Gly Leu Ala Ile Asp Leu Tyr Ala Leu Gly Gln
                355   360   365

Ala Leu Leu Glu Val Ile Leu Leu Gly Arg Leu Pro Gly Gln Leu Pro
                370   375   380

Ile Ser Val His Arg Thr Pro His Tyr His Tyr Tyr Gly His Lys Leu
385   390   395   400

Ser Pro Asp Leu Ala Leu Asp Thr Leu Ala Tyr Arg Cys Val Leu Ala
                405   410   415

Pro Tyr Ile Leu Pro Ser Asp Ile Pro Gly Asp Leu Asn Tyr Asn Pro
                420   425   430

Phe Ile His Ala Gly Glu Leu Asn Thr Arg Ile Ser Arg Asn Ser Leu
                435   440   445

Arg Arg Ile Phe Gln Cys His Ala Val Arg Tyr Gly Val Thr His Ser
    450   455   460

Lys Leu Phe Glu Gly Ile Arg Ile Pro Ala Ser Leu Tyr Pro Ala Thr
465   470   475   480

Val Val Thr Ser Leu Leu Cys His Asp Asn Ser Glu Ile Arg Ser Asp
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His Pro Leu Leu Trp His Asp Arg Asp Trp Ile Gly Ser Thr
                500   505   510

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Met Gly Gln Ser Ser Ser Ser Gly Arg Gly Gly Ile Cys Gly Leu Cys
1   5   10   15

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aaa cgg tac aac gag ctt gtt acg tgc aac gga gaa acc gtt gct ttg        96
Lys Arg Tyr Asn Glu Leu Val Thr Cys Asn Gly Glu Thr Val Ala Leu
            20                  25                  30

aac tca gag ttc ttt gaa gac ttt gac ttt gat gag aat gta aca gag       144
Asn Ser Glu Phe Phe Glu Asp Phe Asp Phe Asp Glu Asn Val Thr Glu
            35                  40                  45

gac gcc gat aaa tcc aca caa cgc cgc cca cga gtg atc gat gta aca       192
Asp Ala Asp Lys Ser Thr Gln Arg Arg Pro Arg Val Ile Asp Val Thr
            50                  55                  60

cca aaa cga aaa cct tcg gga aag agc tcc cat tcc aaa tgc gca aaa       240
Pro Lys Arg Lys Pro Ser Gly Lys Ser Ser His Ser Lys Cys Ala Lys
65                  70                  75                  80

tgt taa                                                                246
Cys


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1               5                   10                  15


Lys Arg Tyr Asn Glu Leu Val Thr Cys Asn Gly Glu Thr Val Ala Leu
            20                  25                  30


Asn Ser Glu Phe Phe Glu Asp Phe Asp Phe Asp Glu Asn Val Thr Glu
            35                  40                  45


Asp Ala Asp Lys Ser Thr Gln Arg Arg Pro Arg Val Ile Asp Val Thr
            50                  55                  60


Pro Lys Arg Lys Pro Ser Gly Lys Ser Ser His Ser Lys Cys Ala Lys
65                  70                  75                  80


Cys


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1               5                   10                  15

atc cca acg tac acg ttg tgt att aaa gca ttg tat aaa aac acg cat          96
Ile Pro Thr Tyr Thr Leu Cys Ile Lys Ala Leu Tyr Lys Asn Thr His
                20                  25                  30

gcg ggc ttg ctg ttc tca ttt cta ggt ttt gtc tta aat aca ccc gcc         144
Ala Gly Leu Leu Phe Ser Phe Leu Gly Phe Val Leu Asn Thr Pro Ala
            35                  40                  45

atg agc atc tct gga ccc cca acg acg ttt att tta tat agg tta cat         192
Met Ser Ile Ser Gly Pro Pro Thr Thr Phe Ile Leu Tyr Arg Leu His
        50                  55                  60

ggg gtt agg cgg gtt ctt cac tgg act tta ccg gat cat gaa caa aca         240
Gly Val Arg Arg Val Leu His Trp Thr Leu Pro Asp His Glu Gln Thr
65                  70                  75                  80

ctc tac gca ttt acg ggt ggg tca aga tca atg gcg gtg aag acg gac         288
Leu Tyr Ala Phe Thr Gly Gly Ser Arg Ser Met Ala Val Lys Thr Asp
                85                  90                  95

gct cga tgt gat aca atg agc ggt ggt atg atc gtc ctt caa cac acc         336
Ala Arg Cys Asp Thr Met Ser Gly Gly Met Ile Val Leu Gln His Thr
                100                 105                 110

cat aca gtg acc ctg cta acc ata gac tgt tct act gac ttt tca tca         384
His Thr Val Thr Leu Leu Thr Ile Asp Cys Ser Thr Asp Phe Ser Ser
            115                 120                 125

tac gca ttt acg cac cgg gat ttc cac tta cag gac aaa ccc cac gca         432
Tyr Ala Phe Thr His Arg Asp Phe His Leu Gln Asp Lys Pro His Ala
        130                 135                 140

aca ttt gcg atg ccg ttt atg tcc tgg gtc ggt tct gac cca aca tct         480
Thr Phe Ala Met Pro Phe Met Ser Trp Val Gly Ser Asp Pro Thr Ser
145                 150                 155                 160

cag ctg tac agt aat gtg ggg ggg gta cta tcc gta ata acg gaa gat         528
Gln Leu Tyr Ser Asn Val Gly Gly Val Leu Ser Val Ile Thr Glu Asp
                165                 170                 175

gac cta tcc atg tgt atc tca att gtt ata tac ggt tta cgg gta aac         576
Asp Leu Ser Met Cys Ile Ser Ile Val Ile Tyr Gly Leu Arg Val Asn
                180                 185                 190

aga cct gac gat cag acc aca cca aca cca acc ccg cac cag tat aca         624
Arg Pro Asp Asp Gln Thr Thr Pro Thr Pro Thr Pro His Gln Tyr Thr
            195                 200                 205

tcg caa agg cgg cag cct gaa acc aac tgt cct tct tca cca caa ccg         672
Ser Gln Arg Arg Gln Pro Glu Thr Asn Cys Pro Ser Ser Pro Gln Pro
    210                 215                 220
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gcc ttt ttc aca tca gac gac gac gtt ctt tcg tta ata tta cgg gac          720
Ala Phe Phe Thr Ser Asp Asp Asp Val Leu Ser Leu Ile Leu Arg Asp
225                 230             235                 240

gcc gca aac gcg taa                                                       735
Ala Ala Asn Ala
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<213>  Varicella zoster

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1               5                   10                  15


Ile Pro Thr Tyr Thr Leu Cys Ile Lys Ala Leu Tyr Lys Asn Thr His
                20              25                  30


Ala Gly Leu Leu Phe Ser Phe Leu Gly Phe Val Leu Asn Thr Pro Ala
            35              40              45


Met Ser Ile Ser Gly Pro Pro Thr Thr Phe Ile Leu Tyr Arg Leu His
        50              55                  60


Gly Val Arg Arg Val Leu His Trp Thr Leu Pro Asp His Glu Gln Thr
65              70              75                  80


Leu Tyr Ala Phe Thr Gly Gly Ser Arg Ser Met Ala Val Lys Thr Asp
                85              90                  95


Ala Arg Cys Asp Thr Met Ser Gly Gly Met Ile Val Leu Gln His Thr
            100             105             110


His Thr Val Thr Leu Leu Thr Ile Asp Cys Ser Thr Asp Phe Ser Ser
            115             120             125


Tyr Ala Phe Thr His Arg Asp Phe His Leu Gln Asp Lys Pro His Ala
    130             135             140


Thr Phe Ala Met Pro Phe Met Ser Trp Val Gly Ser Asp Pro Thr Ser
145             150             155             160


Gln Leu Tyr Ser Asn Val Gly Gly Val Leu Ser Val Ile Thr Glu Asp
                165             170             175
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Asp Leu Ser Met Cys Ile Ser Ile Val Ile Tyr Gly Leu Arg Val Asn
          180   185   190

Arg Pro Asp Asp Gln Thr Thr Pro Thr Pro Thr Pro His Gln Tyr Thr
          195   200   205

Ser Gln Arg Arg Gln Pro Glu Thr Asn Cys Pro Ser Ser Pro Gln Pro
    210   215   220

Ala Phe Phe Thr Ser Asp Asp Asp Val Leu Ser Leu Ile Leu Arg Asp
225   230   235   240

Ala Ala Asn Ala

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gttccgcttt tattaacaac aaacagtccg cgcgccagtg gcgctcacga gaaaaggagg   180

ggactccgtc acccccgact ctgcggggg ctcctccccc cgcgccctcc ccacacatcg   240

tcctcgtcct cggaggacga ggacgaggac aacagctcca ccttgaccgc cgggcgcaaa   300

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gttccgtcgc tccctccaa caccgtctcc gcggcccaa aaccgggcgg ccacattact   600

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                                                         Met Phe Cys
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Thr Ser Pro Ala Thr Arg Gly Asp Ser Ser Glu Ser Lys Pro Gly Ala
  5                    10                  15

tcg gtt gat gtt aac gga aag atg gaa tat gga tct gca cca gga ccc       5673
Ser Val Asp Val Asn Gly Lys Met Glu Tyr Gly Ser Ala Pro Gly Pro
 20                  25                  30                  35

ctg aac ggc cgg gat acg tcg cgg ggc ccc ggc gcg ttt tgt act ccg       5721
Leu Asn Gly Arg Asp Thr Ser Arg Gly Pro Gly Ala Phe Cys Thr Pro
                  40                  45                  50

ggt tgg gag atc cac ccg gcc agg ctc gtt gag gac atc aac cgt gtt       5769
Gly Trp Glu Ile His Pro Ala Arg Leu Val Glu Asp Ile Asn Arg Val
                  55                  60                  65

ttt tta tgt att gca cag tcg tcg gga cgc gtc acg cga gat tca cga       5817
Phe Leu Cys Ile Ala Gln Ser Ser Gly Arg Val Thr Arg Asp Ser Arg
                  70                  75                  80

aga ttg cgg cgc ata tgc ctc gac ttt tat cta atg ggt cgc acc aga       5865
Arg Leu Arg Arg Ile Cys Leu Asp Phe Tyr Leu Met Gly Arg Thr Arg
              85                  90                  95

cag cgt ccc acg tta gcg tgc tgg gag gaa ttg tta cag ctt caa ccc       5913
Gln Arg Pro Thr Leu Ala Cys Trp Glu Glu Leu Leu Gln Leu Gln Pro
100                 105                 110                 115

acc cag acg cag tgc tta cgc gct act tta atg gaa gtg tcc cat cga       5961
Thr Gln Thr Gln Cys Leu Arg Ala Thr Leu Met Glu Val Ser His Arg
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His Arg Ser Ala Leu Glu Cys Asp Val Ser Asp Asp Gly Gly Glu Asp
        150              155              160

gat agc gac gat gat ggg tct acg cca tcg gat gta att gaa ttt cgg      6105
Asp Ser Asp Asp Asp Gly Ser Thr Pro Ser Asp Val Ile Glu Phe Arg
        165              170              175

gat tcc gac gcg gaa tca tcg gac ggg gaa gac ttt ata gtg gaa gaa      6153
Asp Ser Asp Ala Glu Ser Ser Asp Gly Glu Asp Phe Ile Val Glu Glu
180              185              190              195

gaa tca gag gag agc acc gat tct tgt gaa cca gac ggg gta ccc ggc      6201
Glu Ser Glu Glu Ser Thr Asp Ser Cys Glu Pro Asp Gly Val Pro Gly
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gat tgt tat cga gac ggg gat ggg tgc aac acc ccg tcc cca aag aga      6249
Asp Cys Tyr Arg Asp Gly Asp Gly Cys Asn Thr Pro Ser Pro Lys Arg
             215              220              225

ccc cag cgt gcc atc gag cga tac gcg ggt gca gaa acc gcg gaa tat      6297
Pro Gln Arg Ala Ile Glu Arg Tyr Ala Gly Ala Glu Thr Ala Glu Tyr
         230              235              240

aca gcc gcg aaa gcg ctc acc gcg ttg ggc gag ggg ggt gta gat tgg      6345
Thr Ala Ala Lys Ala Leu Thr Ala Leu Gly Glu Gly Gly Val Asp Trp
         245              250              255

aag cga cgt cga cac gaa gcc ccg cgc cgg cat gat ata ccg ccc ccc      6393
Lys Arg Arg Arg His Glu Ala Pro Arg Arg His Asp Ile Pro Pro Pro
260              265              270              275

cat ggc gtg tag tctttataaa taaatacaat ggtttggctc gtgtcttttt          6445
His Gly Val


ttgatgtctg tctgtggggg agtggggtgt tgtggatatt agagggtaga gggtgctggt      6505

ttgaacgtct ccattaaccc acggggtccc cacacggccc gtgtggt atg aat ctc        6561
                                                     Met Asn Leu
                                                         280

tgc gga tcc cgc ggt gag cac ccg ggc ggt gaa tat gcc gga ctt tac      6609
Cys Gly Ser Arg Gly Glu His Pro Gly Gly Glu Tyr Ala Gly Leu Tyr
             285              290              295

tgc aca cga cac gat acc ccc gcg cac cag gct ctc atg aac gac gcc      6657
Cys Thr Arg His Asp Thr Pro Ala His Gln Ala Leu Met Asn Asp Ala
         300              305              310

gaa cgg tac ttc gcc gcc gcg cta tgc gcc ata tct acc gag gcc tac      6705
Glu Arg Tyr Phe Ala Ala Ala Leu Cys Ala Ile Ser Thr Glu Ala Tyr
         315              320              325

gag gct ttt ata cac agc ccc tcc gag aga ccg tgc gcg agt ttg tgg      6753
Glu Ala Phe Ile His Ser Pro Ser Glu Arg Pro Cys Ala Ser Leu Trp
330              335              340              345
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ggg agg gca aag gac gcc ttc gga cgg atg tgc ggg gag ctc gca gcg       6801
Gly Arg Ala Lys Asp Ala Phe Gly Arg Met Cys Gly Glu Leu Ala Ala
            350             355             360

gat aga caa cgt cca ccc tcg gtt ccg ccg atc cgc aga gcg gtg tta       6849
Asp Arg Gln Arg Pro Pro Ser Val Pro Pro Ile Arg Arg Ala Val Leu
            365             370             375

tcg tta tta cgc gag caa tgc atg ccg gat cca caa tcg cat ctg gag       6897
Ser Leu Leu Arg Glu Gln Cys Met Pro Asp Pro Gln Ser His Leu Glu
            380             385             390

ctc agc gag cgg ctg ata ttg atg gca tat tgg tgc tgt ttg gga cac       6945
Leu Ser Glu Arg Leu Ile Leu Met Ala Tyr Trp Cys Cys Leu Gly His
            395             400             405

gcc gga ctt ccg act att gga ttg tcg ccc gat aat aaa tgc atc cgc       6993
Ala Gly Leu Pro Thr Ile Gly Leu Ser Pro Asp Asn Lys Cys Ile Arg
410             415             420             425

gcc gaa tta tat gac cgc ccc ggg gga att tgt cac agg ctt ttt gac       7041
Ala Glu Leu Tyr Asp Arg Pro Gly Gly Ile Cys His Arg Leu Phe Asp
            430             435             440

gcg tac ctg ggc tgc ggg tcc ctt gga gtc cca aga acc tac gag aga       7089
Ala Tyr Leu Gly Cys Gly Ser Leu Gly Val Pro Arg Thr Tyr Glu Arg
            445             450             455

tcc tga cacccatcc ctttatatag aaaaaaaaaa taaatttaaa acatacacg          7145
Ser


gataaaagcg tactgttttt tatttaaatt tacacgctcg gcgttgcccc ggttcggtga      7205

tcaccgggtc ttatctatat acaccgtgta actcgaaccc ccgtgactcc ctccaatcgc      7265

gttaccaaac tcttcttccg tatccgtaga ttccgagtcc tcgaaatcgt ccactggaag      7325

gccagcgtaa tacatgcttt ggttatacgg ggacttgtct accctatagg ctttaaccct      7385

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tttttcatcc cctttccagg tgaccaaaaa cgtggcgtag gtagacgtac catcggagcc    8165

gcgcatgttc caaatgtaca cacccaagta ttgtttttct gtccgaagta ctttcaagac    8225

acccggttca atctcggggg ggtctaattc gagttcatca aacagtgtgc tcgtgtttac    8285

aacaatccac ggttggtccg cttccttctt accttgaaaa cggtaactga tttcggccaa    8345

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taaagtaaac gggtgatttt cttccactga cacctcaatg agtctttggc cttggggttt    8585

tggattaaga tctcctttaa acacgtcacc gtattgacgt ggtccacat ttacaatttt     8645

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ctgattatac accccatggt gttcgtgtgc gttctctaaa aatccatcat aatcattacg    8825

tggccatata taaggtgagt tatgatcgta cgcttttcgc gaagactctc cccgatttac    8885

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cacgaagatc aagcatatgt tgaaacaggg aggtaccgga cccttgggt gtcgcgggta    9785
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caagaatgaa accatcggtg gatctgctat ggtctaaccg aacaagaagt acatacacac      9965

cagcatcatt tattcccggt ttggtaattt tcaacattac accagcatcc ggctctgttg     10025

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aaaggtgtg gtattaaaca cttttaaact agcctgctgg ccttacaatc tggatttct    12244

atg gcc gga caa aac acc atg gag ggt gag gcc gtg gcc tta ctg atg    12292
Met Ala Gly Gln Asn Thr Met Glu Gly Glu Ala Val Ala Leu Leu Met
    460             465                 470

gaa gcg gtg gta acc ccg cga gcg caa cca aat aat aca acg ata aca    12340
Glu Ala Val Val Thr Pro Arg Ala Gln Pro Asn Asn Thr Thr Ile Thr
475             480                 485                 490

gcc ata caa ccg agc cgt tcg gct gaa aag tgt tat tat agt gat agc    12388
Ala Ile Gln Pro Ser Arg Ser Ala Glu Lys Cys Tyr Tyr Ser Asp Ser
                495                 500                 505

gaa aat gaa acg gca gat gaa ttt ttg cgt cga att gga aaa tat caa    12436
Glu Asn Glu Thr Ala Asp Glu Phe Leu Arg Arg Ile Gly Lys Tyr Gln
                510                 515                 520

cat aaa ata tat cat cgt aaa aaa ttc tgt tat att acg cta ata att    12484
His Lys Ile Tyr His Arg Lys Lys Phe Cys Tyr Ile Thr Leu Ile Ile
        525                 530                 535

gtc ttt gta ttt gct atg acg gga gcg gcc ttt gcc ttg gga tat ata    12532
Val Phe Val Phe Ala Met Thr Gly Ala Ala Phe Ala Leu Gly Tyr Ile
    540                 545                 550

acg tca caa ttt gtt gga taa gtggacgatt cgaggactc ggaatctacg       12583
Thr Ser Gln Phe Val Gly
555                 560

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aataaaaaac agtacgcttt tatccggtgt atgtttttaaa tttattttt ttttctatat   12763

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                                                        Met Asp Thr

ccg ccg atg cag cgc tct aca ccc caa cgc gcg ggg tcg cct gat act   15808
Pro Pro Met Gln Arg Ser Thr Pro Gln Arg Ala Gly Ser Pro Asp Thr
    565   570   575

ttg gag tta atg gac ctg ttg gac gcg gcc gcg gcg gcc gcc gaa cac   15856
Leu Glu Leu Met Asp Leu Leu Asp Ala Ala Ala Ala Ala Ala Glu His
580   585   590   595

agg gcc cgg gtg gtc acc tcg agt cag cct gac gat cta cta ttt gga   15904
Arg Ala Arg Val Val Thr Ser Ser Gln Pro Asp Asp Leu Leu Phe Gly
                600   605   610

gag aac ggg gtc atg gtg gga cgg gaa cac gag atc gtt tca att ccc   15952
Glu Asn Gly Val Met Val Gly Arg Glu His Glu Ile Val Ser Ile Pro
                615   620   625

tcc gta tcg gga ctt caa cca gaa ccc aga acg gaa gat gtt ggc gaa   16000
Ser Val Ser Gly Leu Gln Pro Glu Pro Arg Thr Glu Asp Val Gly Glu
                630   635   640

gag cta aca caa gac gac tac gta tgc gag gac ggt cag gat cta atg   16048

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    Glu Leu Thr Gln Asp Asp Tyr Val Cys Glu Asp Gly Gln Asp Leu Met
        645                     650                 655

ggc tcg cct gta atc ccg ctg gcc gag gtc ttc cac acc cga ttc tcg    16096
Gly Ser Pro Val Ile Pro Leu Ala Glu Val Phe His Thr Arg Phe Ser
    660                     665                 670                 675

gag gcc ggc gcg cga gaa cca aca gga gcc gat cgc tcc ctt gag aca    16144
Glu Ala Gly Ala Arg Glu Pro Thr Gly Ala Asp Arg Ser Leu Glu Thr
                    680                 685                 690

gtc tct ctc gga acg aag ctt gct agg tct cca aaa cca ccg atg aac    16192
Val Ser Leu Gly Thr Lys Leu Ala Arg Ser Pro Lys Pro Pro Met Asn
                695                 700                 705

gat ggg gaa acg ggc aga ggt acg acc cct ccg ttc ccg cag gcc ttc    16240
Asp Gly Glu Thr Gly Arg Gly Thr Thr Pro Pro Phe Pro Gln Ala Phe
            710                 715                 720

tcc cct gta tcc ccc gcg tct cct gtt gga gac gcc gcc ggg aac gat    16288
Ser Pro Val Ser Pro Ala Ser Pro Val Gly Asp Ala Ala Gly Asn Asp
    725                     730                 735

caa cgg gaa gac cag cgg tct ata ccc cga caa acg acg aga gga aat    16336
Gln Arg Glu Asp Gln Arg Ser Ile Pro Arg Gln Thr Thr Arg Gly Asn
740                     745                 750                 755

tca cca ggt ttg ccg tcg gtg gtc cat cga gac aga caa act cag tcc    16384
Ser Pro Gly Leu Pro Ser Val Val His Arg Asp Arg Gln Thr Gln Ser
                    760                 765                 770

atc tcg ggt aaa aag ccg ggc gat gag caa gcg ggt cat gcg cat gca    16432
Ile Ser Gly Lys Lys Pro Gly Asp Glu Gln Ala Gly His Ala His Ala
                775                 780                 785

tcg ggg gac gga gta gtt ctc cag aaa act caa cgg ccc gct cag gga    16480
Ser Gly Asp Gly Val Val Leu Gln Lys Thr Gln Arg Pro Ala Gln Gly
            790                 795                 800

aag agc ccg aag aaa aag act ttg aag gtt aag gtc cca ctc ccg gcg    16528
Lys Ser Pro Lys Lys Lys Thr Leu Lys Val Lys Val Pro Leu Pro Ala
    805                     810                 815

cgg aaa ccc ggt gga cct gta ccc ggc ccg gtt gag caa ttg tac cac    16576
Arg Lys Pro Gly Gly Pro Val Pro Gly Pro Val Glu Gln Leu Tyr His
820                     825                 830                 835

gtc ctt tcg gac agc gtt ccc gct aag ggg gca aag gcg gac ctg ccg    16624
Val Leu Ser Asp Ser Val Pro Ala Lys Gly Ala Lys Ala Asp Leu Pro
                    840                 845                 850

ttt gag acc gat gat acc cgc cca agg aaa cat gat gcc cgg ggt ata    16672
Phe Glu Thr Asp Asp Thr Arg Pro Arg Lys His Asp Ala Arg Gly Ile
                855                 860                 865

aca cct cgc gtc cct gga cgt tcg tcg ggg ggc aaa cct aga gcg ttt    16720
Thr Pro Arg Val Pro Gly Arg Ser Ser Gly Gly Lys Pro Arg Ala Phe
            870                 875                 880

ttg gcc ctg ccg gga aga tcc cac gca cca gac ccg att gag gat gac    16768
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Leu Ala Leu Pro Gly Arg Ser His Ala Pro Asp Pro Ile Glu Asp Asp
   885                     890                 895

agc cca gtg gag aaa aag cca aag agt cgt gag ttt gtt tcg tct tca      16816
Ser Pro Val Glu Lys Lys Pro Lys Ser Arg Glu Phe Val Ser Ser Ser
900                 905                 910                 915

tcc tct tcc tcg tcg tgg gga tcg tca tcg gag gat gaa gac gat gaa      16864
Ser Ser Ser Ser Ser Trp Gly Ser Ser Ser Glu Asp Glu Asp Asp Glu
                920                 925                 930

ccc cgg cgc gtt tcg gtg gga agt gaa act aca ggc agc agg tcc gga      16912
Pro Arg Arg Val Ser Val Gly Ser Glu Thr Thr Gly Ser Arg Ser Gly
            935                 940                 945

cgc gaa cac gcc cct tcc ccg tca aat tcg gat gat tcg gac tca aat      16960
Arg Glu His Ala Pro Ser Pro Ser Asn Ser Asp Asp Ser Asp Ser Asn
            950                 955                 960

gat ggt ggg tcg acg aaa caa aat atc caa ccg gga tat cga tcc atc      17008
Asp Gly Gly Ser Thr Lys Gln Asn Ile Gln Pro Gly Tyr Arg Ser Ile
        965                 970                 975

agc ggt ccc gat ccg agg att cgt aag acc aaa cgt ctt gcg ggg gaa      17056
Ser Gly Pro Asp Pro Arg Ile Arg Lys Thr Lys Arg Leu Ala Gly Glu
980                 985                 990                 995

ccg ggg cgc cag aga  cag aaa tca ttt tcc  ctg ccg cga tcc aga       17101
Pro Gly Arg Gln Arg  Gln Lys Ser Phe Ser  Leu Pro Arg Ser Arg
                1000             1005                 1010

acc ccg ata att ccc  ccg gtg tcg ggg ccg  ctc atg atg ccc gac       17146
Thr Pro Ile Ile Pro  Pro Val Ser Gly Pro  Leu Met Met Pro Asp
                1015             1020                 1025

gga agc cct tgg ccc  gga tcg gca ccc ctc  cca tcc aac agg gtg       17191
Gly Ser Pro Trp Pro  Gly Ser Ala Pro Leu  Pro Ser Asn Arg Val
                1030             1035                 1040

cgg ttt gga ccg tcc  ggg gag acc aga gag  ggt cac tgg gag gat       17236
Arg Phe Gly Pro Ser  Gly Glu Thr Arg Glu  Gly His Trp Glu Asp
                1045             1050                 1055

gag gct gtg aga gcg  gcg cgg gct cgt tac  gag gcc tca acg gaa       17281
Glu Ala Val Arg Ala  Ala Arg Ala Arg Tyr  Glu Ala Ser Thr Glu
                1060             1065                 1070

ccc gtg ccg ctt tac  gtg ccg gag ttg gga  gat ccg gct aga cag       17326
Pro Val Pro Leu Tyr  Val Pro Glu Leu Gly  Asp Pro Ala Arg Gln
                1075             1080                 1085

tac cgc gcg ctg att  aac ctg atc tac tgt  cca gac aga gac cct       17371
Tyr Arg Ala Leu Ile  Asn Leu Ile Tyr Cys  Pro Asp Arg Asp Pro
                1090             1095                 1100

ata gca tgg ctc cag  aac ccc aag ctg acc  ggt gtc aac tcg gcc       17416
Ile Ala Trp Leu Gln  Asn Pro Lys Leu Thr  Gly Val Asn Ser Ala
                1105             1110                 1115

ctg aac cag ttc tac  caa aag ctg ttg cca  ccg gga cgg gcg ggt       17461
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Leu Asn Gln Phe Tyr  Gln Lys Leu Leu Pro  Pro Gly Arg Ala Gly
        1120              1125              1130

acc gcc gtt acg ggg  agc gta gcg tct ccc  gtt ccg cat gta ggc      17506
Thr Ala Val Thr Gly  Ser Val Ala Ser Pro  Val Pro His Val Gly
        1135              1140              1145

gaa gcc atg gcc acg  ggg gag gcc ctc tgg  gct ctc ccc cac gcg      17551
Glu Ala Met Ala Thr  Gly Glu Ala Leu Trp  Ala Leu Pro His Ala
        1150              1155              1160

gcc gcg gcc gtg gct  atg agc cgt cga tac  gac cgg gcc caa aaa      17596
Ala Ala Ala Val Ala  Met Ser Arg Arg Tyr  Asp Arg Ala Gln Lys
        1165              1170              1175

cac ttt atc cta cag  agt ctc cgc aga gcc  ttt gcc agc atg gca      17641
His Phe Ile Leu Gln  Ser Leu Arg Arg Ala  Phe Ala Ser Met Ala
        1180              1185              1190

tac ccc gag gca acg  ggc tcc agt ccg gcg  gcg cgg atc tcc cgc      17686
Tyr Pro Glu Ala Thr  Gly Ser Ser Pro Ala  Ala Arg Ile Ser Arg
        1195              1200              1205

ggt cac cct tct cca  aca acc ccg gcc aca  cag gct ccc gac cct      17731
Gly His Pro Ser Pro  Thr Thr Pro Ala Thr  Gln Ala Pro Asp Pro
        1210              1215              1220

cag ccg tcg gcc gcc  gca cgc tct ctt tct  gtg tgt cca ccg gat      17776
Gln Pro Ser Ala Ala  Ala Arg Ser Leu Ser  Val Cys Pro Pro Asp
        1225              1230              1235

gat cgt tta cga act  ccg cgc aag cgc aag  tcc cag cca gtc gag      17821
Asp Arg Leu Arg Thr  Pro Arg Lys Arg Lys  Ser Gln Pro Val Glu
        1240              1245              1250

agc aga agc ctc ctc  gac aag att agg gag  aca ccc gtc gcg gac      17866
Ser Arg Ser Leu Leu  Asp Lys Ile Arg Glu  Thr Pro Val Ala Asp
        1255              1260              1265

gcc cgg gtt gca gac  gat cat gtg gtt tcc  aag gcc aag agg cgg      17911
Ala Arg Val Ala Asp  Asp His Val Val Ser  Lys Ala Lys Arg Arg
        1270              1275              1280

gta tcc gag ccc gtg  acc atc acc tcg ggc  cct gtg gtg gat ccc      17956
Val Ser Glu Pro Val  Thr Ile Thr Ser Gly  Pro Val Val Asp Pro
        1285              1290              1295

ccc gcc gta ata acg  atg cca ctt gac gga  ccg gcc cca aac ggg      18001
Pro Ala Val Ile Thr  Met Pro Leu Asp Gly  Pro Ala Pro Asn Gly
        1300              1305              1310

gga ttt cgg cgt att  ccc cgg ggg gcc ctg  cat acc ccg gtc ccg      18046
Gly Phe Arg Arg Ile  Pro Arg Gly Ala Leu  His Thr Pro Val Pro
        1315              1320              1325

tcg gac cag gct cgc  aag gcg tac tgt acc  ccc gaa acc atc gcc      18091
Ser Asp Gln Ala Arg  Lys Ala Tyr Cys Thr  Pro Glu Thr Ile Ala
        1330              1335              1340

cgt ctg gtc gac gac  cca ttg ttt ccc acg  gcc tgg cgc cct gcg      18136
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Arg Leu Val Asp Asp   Pro Leu Phe Pro Thr   Ala Trp Arg Pro Ala
            1345                 1350                 1355

cta agc ttt gat ccc   ggc gcc ttg gcg gaa   atc gcc gct cgg cgt        18181
Leu Ser Phe Asp Pro   Gly Ala Leu Ala Glu   Ile Ala Ala Arg Arg
            1360                 1365                 1370

ccg ggc gga gga gac   cga cgg ttt ggt cca   ccc agc gga gtg gag        18226
Pro Gly Gly Gly Asp   Arg Arg Phe Gly Pro   Pro Ser Gly Val Glu
            1375                 1380                 1385

gcg ctg cga cgg agg   tgc gcc tgg atg cgg   cag atc cca gac ccg        18271
Ala Leu Arg Arg Arg   Cys Ala Trp Met Arg   Gln Ile Pro Asp Pro
            1390                 1395                 1400

gag gat gtg agg ctt   ctg atc atc tac gat   ccg ttg ccc gga gag        18316
Glu Asp Val Arg Leu   Leu Ile Ile Tyr Asp   Pro Leu Pro Gly Glu
            1405                 1410                 1415

gac atc aac ggc ccc   ctc gag agc acc ctc   gcg aca gat ccg gga        18361
Asp Ile Asn Gly Pro   Leu Glu Ser Thr Leu   Ala Thr Asp Pro Gly
            1420                 1425                 1430

ccg tca tgg agt cca   tcc cga ggg gga ctg   tct gtg gtc ctg gca        18406
Pro Ser Trp Ser Pro   Ser Arg Gly Gly Leu   Ser Val Val Leu Ala
            1435                 1440                 1445

gcc ctg agt aac cgg   ttg tgc ctg ccg agc   act cat gcc tgg gcc        18451
Ala Leu Ser Asn Arg   Leu Cys Leu Pro Ser   Thr His Ala Trp Ala
            1450                 1455                 1460

ggg aac tgg acc ggc   ccg ccg gac gtg tcc   gct ttg aac gcc cgg        18496
Gly Asn Trp Thr Gly   Pro Pro Asp Val Ser   Ala Leu Asn Ala Arg
            1465                 1470                 1475

ggc gtt tta tta ctg   tcg acc cga gac ctg   gcc ttt gcc ggg gcc        18541
Gly Val Leu Leu Leu   Ser Thr Arg Asp Leu   Ala Phe Ala Gly Ala
            1480                 1485                 1490

gtc gag tat cta ggc   tcg cgg ttg gcc tct   gcc cgg cgc cgg ttg        18586
Val Glu Tyr Leu Gly   Ser Arg Leu Ala Ser   Ala Arg Arg Arg Leu
            1495                 1500                 1505

ctg gtg ttg gac gcg   gtg gcc ctc gag agg   tgg ccc agg gat gga        18631
Leu Val Leu Asp Ala   Val Ala Leu Glu Arg   Trp Pro Arg Asp Gly
            1510                 1515                 1520

ccc gct ttg tct cag   tat cac gtg tac gtc   cgg gcc ccg gcg cga        18676
Pro Ala Leu Ser Gln   Tyr His Val Tyr Val   Arg Ala Pro Ala Arg
            1525                 1530                 1535

ccg gac gcc cag gcc   gtc gtc cga tgg cca   gac tcg gcg gtc aca        18721
Pro Asp Ala Gln Ala   Val Val Arg Trp Pro   Asp Ser Ala Val Thr
            1540                 1545                 1550

gaa gga ctc gcc cgg   gcc gtg ttt gca tcg   tcg cgc acc ttt ggg        18766
Glu Gly Leu Ala Arg   Ala Val Phe Ala Ser   Ser Arg Thr Phe Gly
            1555                 1560                 1565

cca gcg agt ttt gct   cgt atc gag act gcg   ttt gcc aac ctg tac        18811
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Pro Ala Ser Phe Ala Arg Ile Glu Thr Ala Phe Ala Asn Leu Tyr
          1570   1575   1580

ccg ggc gaa caa ccc ctg tgt ttg tgc cgc ggt ggg aac gtc gca   18856
Pro Gly Glu Gln Pro Leu Cys Leu Cys Arg Gly Gly Asn Val Ala
          1585   1590   1595

tac acc gtg tgt acc cgc gcg ggc ccc aag acc cgc gtc ccc ctg   18901
Tyr Thr Val Cys Thr Arg Ala Gly Pro Lys Thr Arg Val Pro Leu
          1600   1605   1610

tcg ccc cgt gaa tac cgg cag tac gtg ctg ccg ggt ttt gac ggt   18946
Ser Pro Arg Glu Tyr Arg Gln Tyr Val Leu Pro Gly Phe Asp Gly
          1615   1620   1625

tgc aag gac ctc gcg cga cag tct cgg ggt ctg ggg ctc ggg gca   18991
Cys Lys Asp Leu Ala Arg Gln Ser Arg Gly Leu Gly Leu Gly Ala
          1630   1635   1640

gcc gac ttt gtg gac gag gcg gca cat agc cac cgc gca gca aac   19036
Ala Asp Phe Val Asp Glu Ala Ala His Ser His Arg Ala Ala Asn
          1645   1650   1655

cga tgg ggc ctg ggt gcc gcg ctt cga ccc gtc ttc ctt ccc gag   19081
Arg Trp Gly Leu Gly Ala Ala Leu Arg Pro Val Phe Leu Pro Glu
          1660   1665   1670

gga cgg aga ccg ggg gcc gcc ggg ccg gag gcc ggc gac gta ccc   19126
Gly Arg Arg Pro Gly Ala Ala Gly Pro Glu Ala Gly Asp Val Pro
          1675   1680   1685

acc tgg gcg agg gtg ttt tgc cgc cac gcc ctg ctg gaa ccc gac   19171
Thr Trp Ala Arg Val Phe Cys Arg His Ala Leu Leu Glu Pro Asp
          1690   1695   1700

cct gcc gca gaa cca ctc gtg ctt cca ccc gtg gcc ggt cgg tcg   19216
Pro Ala Ala Glu Pro Leu Val Leu Pro Pro Val Ala Gly Arg Ser
          1705   1710   1715

gtg gcg ctg tat gcg tcg gcg gac gag gct cgg aat gcc ctc ccc   19261
Val Ala Leu Tyr Ala Ser Ala Asp Glu Ala Arg Asn Ala Leu Pro
          1720   1725   1730

ccg att ccc aga gta atg tgg ccg ccc ggt ttt ggg gcc gcg gag   19306
Pro Ile Pro Arg Val Met Trp Pro Pro Gly Phe Gly Ala Ala Glu
          1735   1740   1745

acg gtg ttg gag ggg agc gac gga aca cgg ttc gtg ttc gga cac   19351
Thr Val Leu Glu Gly Ser Asp Gly Thr Arg Phe Val Phe Gly His
          1750   1755   1760

cac ggg ggc tcg gaa cgg ccg tca gaa acc cag gcg ggg cga cag   19396
His Gly Gly Ser Glu Arg Pro Ser Glu Thr Gln Ala Gly Arg Gln
          1765   1770   1775

cgg cgc acc gca gac gac aga gaa cac gct ttg gag ctg gac gat   19441
Arg Arg Thr Ala Asp Asp Arg Glu His Ala Leu Glu Leu Asp Asp
          1780   1785   1790

tgg gag gtg ggg tgt gaa gac gcg tgg gac agc gag gag ggg ggc   19486

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Trp Glu Val Gly Cys  Glu Asp Ala Trp Asp  Ser Glu Glu Gly Gly
         1795                  1800                  1805

ggg gac gac ggg gac  gca ccg ggg tca tcc  ttt ggg gtg agc atc       19531
Gly Asp Asp Gly Asp  Ala Pro Gly Ser Ser  Phe Gly Val Ser Ile
         1810                  1815                  1820

gtg tcg gtg gcc ccg  ggt gtg ctg cga gac  cgc cgg gtg ggt ttg       19576
Val Ser Val Ala Pro  Gly Val Leu Arg Asp  Arg Arg Val Gly Leu
         1825                  1830                  1835

cgc ccg gcg gtc aag  gtg gag ctg ttg tcc  tcg tcc tcg tcc tcc       19621
Arg Pro Ala Val Lys  Val Glu Leu Leu Ser  Ser Ser Ser Ser Ser
         1840                  1845                  1850

gag gac gag gac gat  gtg tgg gga ggg cgc  ggg ggg agg agc ccc       19666
Glu Asp Glu Asp Asp  Val Trp Gly Gly Arg  Gly Gly Arg Ser Pro
         1855                  1860                  1865

ccg cag agt cgg ggg  tga cggagtcccc tcctttctc gtgagcgcca            19714
Pro Gln Ser Arg Gly
         1870

ctggcgcgcg gactgtttgt tgttaataaa agcggaacgg tttttatgaa aaaagtgtct   19774

gtctgtctgt gcgggcgggc gacgggcggg ctggtcggac ccccccccga aaataacccc   19834

ccccggtttt ctgggcgccc ggcggacccc gggagaggag gccagccctc tcgcggcccc   19894

ctcgagagag aaaaaaaaaa gcgacoccac ctccccgcgc gtttgcgggg cgaccatcgg   19954

gggggacttg cattacccta tcccagtatt gtttgtacgc ctctaatgga gtaactgtcc   20014

caatacaccc gacttcctat atacagtgct tttgtttgtg gacttacctt tatttacggg   20074

tattacaggg gggtggagaa atgtcttcgt atcgctcttt atctaaataa agacagaatc   20134

taaaatgtca cttagctgta taccccggccc aaggttatac caatcaactt ccctgtttgt   20194

tgggactgtc cgcctacccc aatacacatt ttatacccac gttttagtgg gtgggactta   20254

aaagaaatgg gtggagggat atagggggtgt gtcttcgttg gtaccaatta taaaaatgta   20314

ctcgccacaa ctcacaattt agaacgcatg gcagttctgc tacgtgtttg gatgcccgga   20374

cattagaata cagccagttg ttacc atg gat acc ata tta  gcg ggc ggt agc    20426
                            Met Asp Thr Ile Leu  Ala Gly Gly Ser
                                             1875

ggc  acc tcc gac gct tcg  gat aat acc tgc acc  ata tgc atg agc      20471
Gly  Thr Ser Asp Ala Ser  Asp Asn Thr Cys Thr  Ile Cys Met Ser
1880                 1885                 1890

acc  gtt tcc gat ctc gga  aaa acc atg ccg tgt  ttg cac gac ttc      20516
Thr  Val Ser Asp Leu Gly  Lys Thr Met Pro Cys  Leu His Asp Phe
1895                 1900                 1905

tgc  ttt gtt tgt att cgg  gca tgg acc tcc acc  agc gtc cag tgt      20561
Cys  Phe Val Cys Ile Arg  Ala Trp Thr Ser Thr  Ser Val Gln Cys
1910                 1915                 1920
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cct  ctc tgc cgg tgt cca  gtg caa tcc atc ctg  cat aag atc gta       20606
Pro  Leu Cys Arg Cys Pro  Val Gln Ser Ile Leu  His Lys Ile Val
1925                 1930                 1935

agt  gat aca agt tac aag  gaa tat gaa gtg cac  cca tcc gac gac       20651
Ser  Asp Thr Ser Tyr Lys  Glu Tyr Glu Val His  Pro Ser Asp Asp
1940                 1945                 1950

gat  ggt ttt tct gag ccg  tca ttt gaa gat tcc  atc gac atc cta       20696
Asp  Gly Phe Ser Glu Pro  Ser Phe Glu Asp Ser  Ile Asp Ile Leu
1955                 1960                 1965

ccg  gga gat gtc ata gat  ctt ctg cca cca agc  cca gga ccg agt       20741
Pro  Gly Asp Val Ile Asp  Leu Leu Pro Pro Ser  Pro Gly Pro Ser
1970                 1975                 1980

cgg  gag tcc atc caa cag  cca aca tca aga tcg  agt cgg gag ccc       20786
Arg  Glu Ser Ile Gln Gln  Pro Thr Ser Arg Ser  Ser Arg Glu Pro
1985                 1990                 1995

att  caa tca cca aac cct  ggg ccc ctt caa tcg  tcg gct aga gag       20831
Ile  Gln Ser Pro Asn Pro  Gly Pro Leu Gln Ser  Ser Ala Arg Glu
2000                 2005                 2010

ccc  aca gca gag tca cca  agt gac tct caa cag  gat tct ata caa       20876
Pro  Thr Ala Glu Ser Pro  Ser Asp Ser Gln Gln  Asp Ser Ile Gln
2015                 2020                 2025

cca  ccg acc cga gac tcg  agc cct ggt gta acc  aaa aca tgc tct       20921
Pro  Pro Thr Arg Asp Ser  Ser Pro Gly Val Thr  Lys Thr Cys Ser
2030                 2035                 2040

acc  gca tca ttt tta cgg  aag gta ttt ttt aaa  gac caa cct gct       20966
Thr  Ala Ser Phe Leu Arg  Lys Val Phe Phe Lys  Asp Gln Pro Ala
2045                 2050                 2055

gtt  cga tcg gcg acc ccg  gtg gtg tat ggc tcg  att gaa tct gca       21011
Val  Arg Ser Ala Thr Pro  Val Val Tyr Gly Ser  Ile Glu Ser Ala
2060                 2065                 2070

cag  caa ccc cgg acc ggg  ggg cag gac tac cgt  gat cgt cca gta       21056
Gln  Gln Pro Arg Thr Gly  Gly Gln Asp Tyr Arg  Asp Arg Pro Val
2075                 2080                 2085

tct  gtg gga att aat caa  gac cca cga acc atg  gac aga ctg cct       21101
Ser  Val Gly Ile Asn Gln  Asp Pro Arg Thr Met  Asp Arg Leu Pro
2090                 2095                 2100

ttt  cga gcc acg gat aga  gga aca gag gga aac  gcg aga ttc ccg       21146
Phe  Arg Ala Thr Asp Arg  Gly Thr Glu Gly Asn  Ala Arg Phe Pro
2105                 2110                 2115

tgt  tac atg caa cct tta  ctc gga tgg ctt gat  gat caa ctt gcg       21191
Cys  Tyr Met Gln Pro Leu  Leu Gly Trp Leu Asp  Asp Gln Leu Ala
2120                 2125                 2130

gaa  ctg tat caa ccc gaa  att gta gag cct aca  aaa atg ttg ata       21236
Glu  Leu Tyr Gln Pro Glu  Ile Val Glu Pro Thr  Lys Met Leu Ile
2135                 2140                 2145
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tta  aac tat ata ggt att  tac ggg cgt gat gag  gcg gga tta aaa    21281
Leu  Asn Tyr Ile Gly Ile  Tyr Gly Arg Asp Glu  Ala Gly Leu Lys
2150                 2155              2160

aca  tcc ctg cgt tgt ctt  ttg cat gat tca aca  gga ccg ttt gta    21326
Thr  Ser Leu Arg Cys Leu  Leu His Asp Ser Thr  Gly Pro Phe Val
2165                 2170              2175

aca  aac atg tta ttc ttg  ttg gat cga tgt acc  gat cca acc cgc    21371
Thr  Asn Met Leu Phe Leu  Leu Asp Arg Cys Thr  Asp Pro Thr Arg
2180                 2185              2190

cta  acc atg caa acc tgg  acc tgg aaa gat aca  gcc atc caa cta    21416
Leu  Thr Met Gln Thr Trp  Thr Trp Lys Asp Thr  Ala Ile Gln Leu
2195                 2200              2205

att  aca ggt cca att gta  aga cca gaa acc acc  tca acc ggg gag    21461
Ile  Thr Gly Pro Ile Val  Arg Pro Glu Thr Thr  Ser Thr Gly Glu
2210                 2215              2220

acc  tct cgt ggc gat gaa  agg gat acc cga ttg  gta aat aca ccc    21506
Thr  Ser Arg Gly Asp Glu  Arg Asp Thr Arg Leu  Val Asn Thr Pro
2225                 2230              2235

caa  aaa gtc agg ctt ttt  tct gtg tta ccg ggg  att aaa ccg gga    21551
Gln  Lys Val Arg Leu Phe  Ser Val Leu Pro Gly  Ile Lys Pro Gly
2240                 2245              2250

agc  gca agg ggt gct aag  cgc cgt tta ttt cat  acc ggc aga gac    21596
Ser  Ala Arg Gly Ala Lys  Arg Arg Leu Phe His  Thr Gly Arg Asp
2255                 2260              2265

gtt  aaa cga tgc tta aca  ata gac ctg aca tct  gag tct gat tcg    21641
Val  Lys Arg Cys Leu Thr  Ile Asp Leu Thr Ser  Glu Ser Asp Ser
2270                 2275              2280

gca  tgt aag gga agt aaa  acc cgc aaa gtt gcc  tct cca cag ggg    21686
Ala  Cys Lys Gly Ser Lys  Thr Arg Lys Val Ala  Ser Pro Gln Gly
2285                 2290              2295

gag  tcc aat acc ccc tcc  acc tcc gga tca aca  tca ggt tca ctg    21731
Glu  Ser Asn Thr Pro Ser  Thr Ser Gly Ser Thr  Ser Gly Ser Leu
2300                 2305              2310

aaa  cac ctt acc aaa aaa  agc tct gcc ggt aaa  gcg ggt aaa ggt    21776
Lys  His Leu Thr Lys Lys  Ser Ser Ala Gly Lys  Ala Gly Lys Gly
2315                 2320              2325

att  cca aac aag atg aag  aag tcc tag tttgttggga gggggaagga       21823
Ile  Pro Asn Lys Met Lys  Lys Ser
2330                 2335

aatgccttaa acatccacag tctgctttat taccaactgt atgtaaatta tgatcattaa   21883

acgtgcattt taaaaatacc tgagtgttgc tattggtcgt aagggttggt atatctggaa   21943

cccaaggtgt aaatactgcc ccctggtaag tccgtacacg attcggaatg cccgcaatcc   22003

ggtctcggag taaccggggc atcctgctct gcaaatacaa taaacataac agtctaacag   22063
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tacgcatgtg ctgtcgtaag cgctccgccc taaattacaa aaatttgaga ttacgctcaa     22123

tacttgtcac cgtttgtatt tatacacctc tacgggagca aactaaaggt atacttggag     22183

atgcaaccaa ggccgagttg agacgggaaa attagaagct gtttttccag cggcaaaaat     22243

catccggttt gggtatgtct tatagcaatt aaagttatta aaatggccgg aaggtggcgg     22303

gggtggtgaa ggcgagggta aagcaaactt gcggggggat aaaaggcata tatgttacaa     22363

aatacgcacg caaatataaa ttttagtttt gtacttacag taaaggcaac ggtgttttcg     22423

gtttaggcag ccggacccgt ttaaaatgcc aactggatag tctgcaagga ggaaacgctg     22483

ctgcaatgag tcaggttttt aggtgaatta ggtatgatgc atcattttg ttaatggact     22543

tttaatggat tgaaacggat agaaggaaac gtgtagcata atggatattg gttgatattt     22603

taagcacgct gccaagtacg cactaagaat gcttagaaat atttaaactg aaatgcgtgg     22663

gtttggcaaa cgttaccgta aatcaatctc agatccaagg gataatgcc gttgggcagg     22723

cctccaaaag gcaatttgag cgttttaagt ttggggtacg tttttaaagc ttgattggca     22783

aacgttaccg caaatcaatc ttagatccaa gggataatgg ccgttgggca ggcctccaaa     22843

aggcaatttg agcgttttca gtccgcttga aaacggtcta agtatttgcc gtaaatgacc     22903

gcgagaggta taatataaac atctgttttc ccgatgacgt gttaagaaaa gtgattatat     22963

cagataacgg gggactgtaa agcttaatac gtgacatgtg attgggtgta taaatactac     23023

atccaaatct tgcatggaaa ttcgctttgt cggcacgccg tgacgtttga catattaaga     23083

tcgcccttt taggaaaatg agatatgaca ccaagagttt aactaaaggc caactgtata     23143

tataaaactc atacttgtcc atgcttccat tagagtggtc aagttttca aaggatacga     23203

caacgtcgta gtgaaggaa aacacaagcg tcatggcatc acataaatgg ttactgcaga     23263

tagtttttt aaaaactatc acaatcgcgt attgtcttca tctccaagac gacactccgt     23323

tgttttttgg agccaaaccg ctatcggatg tgagtttgat tataacggaa ccgtgcgtgt     23383

catcggtata tgaggcgtgg gactatgcgg cacccccggt atcaaacctc agcgaggcgc     23443

tatcgggaat cgtggttaag acaaaatgtc cagtaccgga agttatactt tggtttaaag     23503

acaaacaaat ggcgtactgg acaaatccat acgtcacctt aaagggctg gcacaatctg     23563

ttggtgaaga acataaaagc ggggacatac gcgatgcttt gttggatgcc ctttccggtg     23623

tatgggtaga ctctactcca tcttccacaa atatcccgga aa atg gat gtg   tct     23677
                                                Met Asp Val  Ser
                                                             2340

ggg gag ccg acc  gtt tgt tcc aac gcg  tat gcc aat gaa atg   aaa      23722
Gly Glu Pro Thr  Val Cys Ser Asn Ala  Tyr Ala Asn Glu Met   Lys
         2345                          2350                2355
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cta tcg gat tca   aag gac att tat gtt   ttg gcc cat ccg gtt   acc        23767
Leu Ser Asp Ser   Lys Asp Ile Tyr Val   Leu Ala His Pro Val   Thr
            2360                   2365                   2370

aaa aaa acc cgc   aag cga ccc cgc ggg   ctg cct ttg ggg gtt   aag        23812
Lys Lys Thr Arg   Lys Arg Pro Arg Gly   Leu Pro Leu Gly Val   Lys
            2375                   2380                   2385

cta gac ccc cca   acc ttc aag tta aat   aac atg tca cat cat   tac        23857
Leu Asp Pro Pro   Thr Phe Lys Leu Asn   Asn Met Ser His His   Tyr
            2390                   2395                   2400

gac acg gaa acg   ttc acc ccc gtc tct   tcg caa ctg gat tcg   gtt        23902
Asp Thr Glu Thr   Phe Thr Pro Val Ser   Ser Gln Leu Asp Ser   Val
            2405                   2410                   2415

gaa gtt ttc agc   aag ttt aac att tcc   cct gag tgg tat gac   ctg        23947
Glu Val Phe Ser   Lys Phe Asn Ile Ser   Pro Glu Trp Tyr Asp   Leu
            2420                   2425                   2430

ttg tcg gac gaa   ctt aaa gag ccg tac   gcg aaa ggt att ttt   tta        23992
Leu Ser Asp Glu   Leu Lys Glu Pro Tyr   Ala Lys Gly Ile Phe   Leu
            2435                   2440                   2445

gaa tac aat cgt   ctt tta aat tca ggg   gaa gaa ata ctt cca   tct        24037
Glu Tyr Asn Arg   Leu Leu Asn Ser Gly   Glu Glu Ile Leu Pro   Ser
            2450                   2455                   2460

aca ggc gat att   ttt gca tgg acg cga   ttt tgc gga ccc cag   agc        24082
Thr Gly Asp Ile   Phe Ala Trp Thr Arg   Phe Cys Gly Pro Gln   Ser
            2465                   2470                   2475

att cgc gtt gta   att att ggt caa gat   cca tac cct acc gcg   gga        24127
Ile Arg Val Val   Ile Ile Gly Gln Asp   Pro Tyr Pro Thr Ala   Gly
            2480                   2485                   2490

cat gca cat ggg   cta gcg ttt agt gta   aaa cgt ggc ata aca   cca        24172
His Ala His Gly   Leu Ala Phe Ser Val   Lys Arg Gly Ile Thr   Pro
            2495                   2500                   2505

ccg tct agt ctt   aaa aat att ttt gcg   gcc ctc atg gaa tca   tac        24217
Pro Ser Ser Leu   Lys Asn Ile Phe Ala   Ala Leu Met Glu Ser   Tyr
            2510                   2515                   2520

cca aat atg act   ccg ccc act cac gga   tgc ctg gag agt tgg   gca        24262
Pro Asn Met Thr   Pro Pro Thr His Gly   Cys Leu Glu Ser Trp   Ala
            2525                   2530                   2535

agg cag ggg gtg   tta ttg ctg aat acc   acg ctt acg gtt cgt   cgc        24307
Arg Gln Gly Val   Leu Leu Leu Asn Thr   Thr Leu Thr Val Arg   Arg
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ggg act ccg ggg   tcg cat gta tac tta   ggc tgg ggg cgg ctg   gtg        24352
Gly Thr Pro Gly   Ser His Val Tyr Leu   Gly Trp Gly Arg Leu   Val
            2555                   2560                   2565

caa cgc gtg cta   cag agg tta tgc gag   aac cgt aca ggg tta   gtt        24397
Gln Arg Val Leu   Gln Arg Leu Cys Glu   Asn Arg Thr Gly Leu   Val
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Phe Met Leu Trp   Gly Ala His Ala Gln   Lys Thr Thr Gln Pro   Asn
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tca aga tgt cat   ctg gtg cta aca cac   gcg cat ccg tcg cca   ttg        24487
Ser Arg Cys His   Leu Val Leu Thr His   Ala His Pro Ser Pro   Leu
            2600                   2605                   2610


tcc cgt gtt cca   ttt cgg aat tgt cga   cat ttc gtt caa gcc   aat        24532
Ser Arg Val Pro   Phe Arg Asn Cys Arg   His Phe Val Gln Ala   Asn
            2615                   2620                   2625


gag tat ttt acg   cgt aaa ggc gaa ccc   gag atc gat tgg agt   gtt        24577
Glu Tyr Phe Thr   Arg Lys Gly Glu Pro   Glu Ile Asp Trp Ser   Val
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ata taa cactccaatc gaccctcttg cgtaccataa tgttttcgga gttgcctcct          24633
Ile


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                            Met Asp Val   Arg Glu Arg Asn Val   Phe
                                        2645                   2650


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Gly Asn Ala Ser   Val Ala Thr Pro Gly   Glu His Gln Lys Phe   Val
            2655                   2660                   2665


cgc gag tta att   ttg tcg gga cac aac   aac gtc gta tta cag   aca        25375
Arg Glu Leu Ile   Leu Ser Gly His Asn   Asn Val Val Leu Gln   Thr
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tac act ggt aaa   tgg tca gac tgc cgt   aaa cac ggt aaa tcg   gtt        25420
Tyr Thr Gly Lys   Trp Ser Asp Cys Arg   Lys His Gly Lys Ser   Val
            2685                   2690                   2695


atg tat aat acc   ggt gaa gcg cgg cac   cca acc tgc aag gct   cat        25465
Met Tyr Asn Thr   Gly Glu Ala Arg His   Pro Thr Cys Lys Ala   His
            2700                   2705                   2710
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Met Gln  Arg Ile Arg Pro Tyr  Trp Ile Lys Phe Glu  Gln Thr Gly
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Gly Ala  Gly Met Ala Asp Gly  Met Ser Gly Ile Asn  Ile Pro Ser
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Ile Leu  Gly Cys Ser Val Thr  Ile Asp Asn Leu Leu  Thr Arg Ala
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Glu Glu  Gly Leu Asp Val Ser  Asp Val Ile Glu Asp  Leu Arg Ile
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Gln Ala  Ile Pro Arg Phe Val  Cys Glu Ala Arg Glu  Val Thr Gly
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Leu Lys  Pro Arg Phe Leu Ala  Asn Ser Val Val Ser  Leu Arg Val
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Lys Pro  Glu His Gln Glu Thr  Val Leu Val Val Leu  Asn Gly Asp
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Ser Ser  Glu Val Ser Cys Asp  Arg Tyr Tyr Met Glu  Cys Val Thr
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Gln Pro  Ala Phe Arg Gly Phe  Ile Phe Ser Val Leu  Thr Ala Val
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Glu Asp  Arg Val Tyr Thr Val  Gly Val Pro Pro Arg  Leu Leu Ile
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Tyr Arg  Met Thr Leu Phe Arg  Pro Asp Asn Val Leu  Asp Phe Thr
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Leu Cys  Val Ile Leu Met Tyr  Leu Glu Gly Ile Gly  Pro Ser Gly
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Tyr Glu Gly Val Leu Trp Leu  Leu Asn Thr Leu Met  Tyr Val Val
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gat aac aac ccc ttt aca aaa  acc cgc gta ttg ccg  cat tat atg      31754
Asp Asn Asn Pro Phe Thr Lys  Thr Arg Val Leu Pro  His Tyr Met
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Pro His Gly Thr Pro Pro Cys  Pro Asp Gly Val Val  Gln Val Pro
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Pro Gly Leu Leu Asn Gly Pro  Leu Arg Asp Ser Glu  Tyr Gln Lys
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Ser Val Tyr Phe Trp Trp Leu  Asn Arg Thr Met Val  Thr Pro Lys
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Asn Val Gln Leu Phe Glu Thr  Tyr Lys Asn Ser Pro  Arg Val Val
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Lys
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Gly Val Thr Phe Tyr Phe Asn Glu Arg Ala Thr Arg Ala Tyr Phe
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Glu Ile Ala Lys Phe Gly His Val Val Arg Gly Val Gly Pro Gly
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Asp Arg Ser Val Ala Ser Tyr Val Arg Ser Glu Leu Asn Arg Thr
      3105   3110   3115

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Gly Lys Thr Trp Ala Val Ser Ser Asn Asn Asn Cys Val Phe Leu
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Asp Arg Val Ala Leu Leu Ala Ala Gly Ser Gly Ala Val Asp Arg
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Asp Leu Cys Gly Thr Phe Asp Val Glu Val Glu Asp Pro Thr Leu
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gca gat tat ctc gtg tcc ctc ccc gtg acg cat tta aca ttg gtg   54987
Ala Asp Tyr Leu Val Ser Leu Pro Val Thr His Leu Thr Leu Val
      3165   3170   3175

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Ala Gly Val Asp Val Thr Arg Glu Asn Lys Leu Lys Leu Phe Pro
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Thr Pro Thr Ala Ile Asn Thr Thr Asn Gly Phe Met Tyr Val Pro
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aac gaa gcc agt ttt tca ttg gtg tat atg cgt atg ttg gag tta   55122
Asn Glu Ala Ser Phe Ser Leu Val Tyr Met Arg Met Leu Glu Leu
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Pro Glu Ile Arg   Asp Ala Leu Asn Gly   Ser Asn Asp Asp Glu   Lys
        3240               3245                   3250

aca agt ata att   gtt agt cgg cgc gct   gct gat gtg gtt acg   gaa        55257
Thr Ser Ile Ile   Val Ser Arg Arg Ala   Ala Asp Val Val Thr   Glu
        3255               3260                   3265

gac gta aaa gca   gat gat gtg ccg att   tcg ggt gaa ccg tat   tct        55302
Asp Val Lys Ala   Asp Asp Val Pro Ile   Ser Gly Glu Pro Tyr   Ser
        3270               3275                   3280

gag aaa cag cct   aga cgg cgt aag aag   tcc gat cat att aca   cta        55347
Glu Lys Gln Pro   Arg Arg Arg Lys Lys   Ser Asp His Ile Thr   Leu
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agt aac ttt gta   cag att agg acc atc   ccc cgg gta atg gac   att        55392
Ser Asn Phe Val   Gln Ile Arg Thr Ile   Pro Arg Val Met Asp   Ile
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tgg gat cct cgc   cat aaa gcc act act   cat tgt atc cgc gcg   tta        55437
Trp Asp Pro Arg   His Lys Ala Thr Thr   His Cys Ile Arg Ala   Leu
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Ser Cys Ala Val   Phe Phe Ala Asp Glu   Val Ile Phe Lys Ala   Arg
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aaa tgg cct gga   ctt gaa gat gaa ctt   aat gaa gcc cgt gag   acg        55527
Lys Trp Pro Gly   Leu Glu Asp Glu Leu   Asn Glu Ala Arg Glu   Thr
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Ile Tyr Thr Ala   Val Val Ala Val Tyr   Gly Glu Arg Gly Glu   Leu
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Pro Phe Phe Gly   His Ala Tyr Gly Arg   Asp Leu Thr Ser Cys   Gln
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cgg ttc gtg att   gtt caa tat ata ctg   tct cgg tgg gaa gcg   ttt        55662
Arg Phe Val Ile   Val Gln Tyr Ile Leu   Ser Arg Trp Glu Ala   Phe
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Asn Cys Tyr Ala   Val Ile Glu Asp Leu   Thr Arg Ser Tyr Val   Asn
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Ala Leu Pro Ser   Asp Asp Asp Thr Asp   Gln Val Ala Gln Asp   Leu
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Glu Gly Val Arg   Ile Leu Arg Leu   Ala Lys Thr Gly Val Gly   Leu
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Ser Asp Thr Val   Pro Val Asp Val   Ser Val Thr Glu Arg His   Glu
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Tyr Glu Ile Ser   Arg Tyr Leu Asp   Thr Leu Tyr Ser Gly Asp   Pro
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Cys Tyr Asn Gly   Ala Val Arg Leu   Cys Arg Leu Leu Gly Ser   Ser
            3525                3530                      3535

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Ile Pro Ile Ala   Leu Tyr Tyr Asn   Thr Ile Ser Gly Asn Ala   Phe
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Glu Pro Tyr Phe   Ala Gly Arg Arg   Tyr Ile Ala Tyr Leu Gly   Ala
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Leu Phe Phe Gly   Arg Val His Gln   Thr Pro Phe Gly Asp Gly   Lys
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Lys Thr Gln Arg
            3585

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gccataccga cccaaaaagg ggaacgtgta ttctcaacgt tgagttggtg ataattgctt    58177

cggcagaaaa aaaagtatgt cgggcaaggg catcccatgt agcaaaatgc gctttatgtt    58237

ccagaatagt attcttgggg actgttgggc gagcgggtaa aagacttacc ccaaacggcc    58297

tttctgcagt tgctgcggtc tcagctcttt ccaaatgcca tacaaggggg tttggtggga    58357

acgtagtaaa cgcaacaaga tgttgcgtag ttaaatacgg cgcaaacgaa ctgtcaaaga    58417

agctcacgtc gggtgtcaca gggtgactaa gaaatccaaa acgtccagca ggaaacggtg    58477

ctcgatgttc tgctttgaaa tggtatggcg ataacaagta ttttggaaat ataaccagcc    58537

cgacgtctcc ttcgtgtgtt gtagggttaa ccttaacaat aaccagaaa acgtgttttc    58597

tatcatttcc ccagtgaagt gatttaatga gttcttcatc gaaaccagta ggataaaagg    58657

cttctaattt cagagacata ttacggtcgg aatattctcg tagaagagca gacatatgtc    58717
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cgatagagcg agtcgcaggg gttggtgtta cgtaagattt attagccgtg gtccaaagag      58777

gaagaattac caccgctaaa actagcgcaa acatagtcgc tgttacttgc gctacaatat      58837

caccgcaacg ttatgcacac agcgtgcctt tacccctcct cacccaccaa caggcttggc      58897

ggcttttaat attaccactc cgttttaggg agataaaggc gggattaaag gatgtggtaa      58957

taaatgacgc atatataaaa aagaaaaaca cgtacacgcg agtatgacaa tgtgtatcat      59017

ctttttactg gtacatacgt aaatactagg tatatttagg aagtgttgtc ctgaacggca      59077

ttaacaagct ctttcaatat attccatgca ccggaggaca tgtttgccgg ggtcatctgg      59137

ggtagcagag tttttagttc ttgtgccgca tgctggggtg tctgttctaa cgataatacg      59197

aacggagaca tgcttcgtga gcagtttgaa agggtctcca ttccccatgc ccataacggc      59257

agaatatttc caaactctcc gcaaagctcc ggaagtttaa gcacggcgaa taacgtgtct      59317

tcaatcccag gtacttcgcg tagttttata cactcggatt tttgtaattt ctgtttaaat      59377

acatcattac aaaatgacag tgtgttccag cccgcgtgcc agttgttagt tttaagaaat      59437

ataattgtat taataagcat tatatataca tttctcagaa ccataacaaa cggcagatta      59497

accgtttctc ccggtctggc ccgtttgctt actctggata aatgactggg gagtgaaacg      59557

gtacaaacta ccaagttggt cccggggggt tcagcgggaa gcgtaaacaa taacccagga      59617

agcgccgctg gggacatatc tcccactaag tatctggaca aggaaaaca tatagttgag       59677

gcgattgggt gtcggtcgga taacataatt ttatacggct ccttatttac ttgtacgaga      59737

tccgatgtac ttgtgtccat caatgccgag attttcgcat gcataattgc atgcggagaa      59797

cagaacaggc tctgaaaatg agccgtgagg cgttgtgcgt cttcaggcga aacgtctcca      59857

ttaagacggc gagtttgtgt tccgtaaatt ccgcaaatgg cgtcctcccc tgcaaggtta      59917

cgccaatacg acagggctc cccaatgagt aagatccggt ttggtgttat tgcaaagtgg       59977

tgtaaaaatt cttcggcggc ggttgttttt ccaattccat acgccccgtc caaataaata      60037

cgcaaaacgc ccattttac atcggtttta tccgttgaca tgtttattgt agacaaacgc       60097

gtcttaggtt atcttctggg acggaacttc aaat atg tcc gct agt cga    att        60149
                                        Met Ser Ala Ser Arg  Ile
                                                          3590

cgg gcc aag tgt  ttt cgt ttg gga caa  cgt tgc cac act cgt  ttt          60194
Arg Ala Lys Cys  Phe Arg Leu Gly Gln  Arg Cys His Thr Arg  Phe
         3595                 3600              3605

tac gat gta ctc  aaa aag gat att gat  aac gta cgt cga ggt  ttc          60239
Tyr Asp Val Leu  Lys Lys Asp Ile Asp  Asn Val Arg Arg Gly  Phe
         3610                 3615              3620

gcg gac gcg ttc  aac ccg agg ctg gca  aaa ctc ctg tcg ccg  tta          60284
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Ala Asp Ala Phe   Asn Pro Arg Leu Ala   Lys Leu Leu Ser Pro   Leu
        3625                3630                      3635

tcc cac gtg gat   gtt caa agg gct gta   cgc ata tca atg tcg   ttt          60329
Ser His Val Asp   Val Gln Arg Ala Val   Arg Ile Ser Met Ser   Phe
        3640                3645                      3650

gaa gta aat ttg   gga cgc cga cgc ccc   gat tgt gtt tgt att   ata          60374
Glu Val Asn Leu   Gly Arg Arg Arg Pro   Asp Cys Val Cys Ile   Ile
        3655                3660                      3665

caa acg gaa tcc   agt ggt gcc gga aag   acc gtt tgt ttt ata   gtg          60419
Gln Thr Glu Ser   Ser Gly Ala Gly Lys   Thr Val Cys Phe Ile   Val
        3670                3675                      3680

gaa tta aaa tct   tgc cgt ttt agc gct   aat ata cat acc cct   act          60464
Glu Leu Lys Ser   Cys Arg Phe Ser Ala   Asn Ile His Thr Pro   Thr
        3685                3690                      3695

aag tat cac cag   ttt tgc gag ggt atg   cgc cag ctg agg gat   acc          60509
Lys Tyr His Gln   Phe Cys Glu Gly Met   Arg Gln Leu Arg Asp   Thr
        3700                3705                      3710

atg gct tta ata   aag gaa acc aca ccc   acg gga tct gat gaa   ata          60554
Met Ala Leu Ile   Lys Glu Thr Thr Pro   Thr Gly Ser Asp Glu   Ile
        3715                3720                      3725

atg gtg acc ccc   ctc ctt gtg ttt gta   tct caa cgg ggt ctg   aac          60599
Met Val Thr Pro   Leu Leu Val Phe Val   Ser Gln Arg Gly Leu   Asn
        3730                3735                      3740

ctg tta cag gta   act cgg tta ccc cca   aag gtg att cat gga   aac          60644
Leu Leu Gln Val   Thr Arg Leu Pro Pro   Lys Val Ile His Gly   Asn
        3745                3750                      3755

ctt gtt atg cta   gcg tcg cat ttg gag   aat gta gcg gaa tat   acc          60689
Leu Val Met Leu   Ala Ser His Leu Glu   Asn Val Ala Glu Tyr   Thr
        3760                3765                      3770

ccc ccg ata agg   tcc gtt aga gag cga   aga cgt cta tgc aaa   aag          60734
Pro Pro Ile Arg   Ser Val Arg Glu Arg   Arg Arg Leu Cys Lys   Lys
        3775                3780                      3785

aaa att cac gta   tgt tct ctt gcg aaa   aag cgt gcg aaa tca   tgc          60779
Lys Ile His Val   Cys Ser Leu Ala Lys   Lys Arg Ala Lys Ser   Cys
        3790                3795                      3800

cat cgt tcc gct   tta aca aag ttt gaa   gaa aat gca gct tgt   ggg          60824
His Arg Ser Ala   Leu Thr Lys Phe Glu   Glu Asn Ala Ala Cys   Gly
        3805                3810                      3815

gtg gat tta ccc   ctt aga agg cct tct   tta ggt gct tgt ggt   gga          60869
Val Asp Leu Pro   Leu Arg Arg Pro Ser   Leu Gly Ala Cys Gly   Gly
        3820                3825                      3830

att tta caa agt   ata acc ggg atg ttt   tcc cat ggg taa gaaaacagct       60918
Ile Leu Gln Ser   Ile Thr Gly Met Phe   Ser His Gly
        3835                3840

tttaaagcag taccggttta tattcacgcc agttgacttt gtttgctgca gacacc atg       60977
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acg gcg aga tat ggg ttc gga tct atc tcg ttt ccg aat aaa tgt   61022
Thr Ala Arg Tyr Gly Phe Gly Ser Ile Ser Phe Pro Asn Lys Cys
3845   3850   3855

ggg ata ttt ttg tct acc act aag aac ttt ata gcc ccc aac ttc   61067
Gly Ile Phe Leu Ser Thr Thr Lys Asn Phe Ile Ala Pro Asn Phe
3860   3865   3870

ccc ata cac tac tgg acg gct ccc gcg ttt gag tta aga ggg cgt   61112
Pro Ile His Tyr Trp Thr Ala Pro Ala Phe Glu Leu Arg Gly Arg
3875   3880   3885

atg aat ccc gat ttg gaa aaa aat acg tta acg tta aaa aat gcg   61157
Met Asn Pro Asp Leu Glu Lys Asn Thr Leu Thr Leu Lys Asn Ala
3890   3895   3900

gcg gcc gtt gcc gca tta gac aac ctt cgc ggg gaa acg att acg   61202
Ala Ala Val Ala Ala Leu Asp Asn Leu Arg Gly Glu Thr Ile Thr
3905   3910   3915

tta cca acg gaa ata gat cgt cgt tta aag ccc ctc gaa gaa caa   61247
Leu Pro Thr Glu Ile Asp Arg Arg Leu Lys Pro Leu Glu Glu Gln
3920   3925   3930

cta acg cgc atg gcc aag gtt ttg gat tcc ctg gag acg gct gct   61292
Leu Thr Arg Met Ala Lys Val Leu Asp Ser Leu Glu Thr Ala Ala
3935   3940   3945

gcc gag gcg gaa gaa gca gat gca caa tct gag gaa tgt aca cgt   61337
Ala Glu Ala Glu Glu Ala Asp Ala Gln Ser Glu Glu Cys Thr Arg
3950   3955   3960

aca gaa ata ata cgc aat gag tct ata cac ccc gag gta cag att   61382
Thr Glu Ile Ile Arg Asn Glu Ser Ile His Pro Glu Val Gln Ile
3965   3970   3975

gcc aaa aat gat gca ccg ttg cag tac gat aca aac ttt caa gtg   61427
Ala Lys Asn Asp Ala Pro Leu Gln Tyr Asp Thr Asn Phe Gln Val
3980   3985   3990

gat ttt atc acc ctg gtg tac ttg gga agg gca agg ggc aat aac   61472
Asp Phe Ile Thr Leu Val Tyr Leu Gly Arg Ala Arg Gly Asn Asn
3995   4000   4005

tct cca ggg att gtt ttc ggg cca tgg tat cgt act ctg cag gaa   61517
Ser Pro Gly Ile Val Phe Gly Pro Trp Tyr Arg Thr Leu Gln Glu
4010   4015   4020

cgg ctt gtg tta gat agg ccc gta gct gca cgc gga gtt gat tgt   61562
Arg Leu Val Leu Asp Arg Pro Val Ala Ala Arg Gly Val Asp Cys
4025   4030   4035

aaa gac ggg cgc att tcc cgt acg ttt atg aac aca acg gta aca   61607
Lys Asp Gly Arg Ile Ser Arg Thr Phe Met Asn Thr Thr Val Thr
4040   4045   4050

tgt cta cag tcc gcc ggg aga atg tat gtt gga gat aga gcg tac   61652

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Cys  Leu Gln Ser Ala Gly  Arg Met Tyr Val Gly  Asp Arg Ala Tyr
4055                 4060               4065

tcc  gcg ttc gag tgt gcg  gta tta tgt tta tat  tta atg tat agg      61697
Ser  Ala Phe Glu Cys Ala  Val Leu Cys Leu Tyr  Leu Met Tyr Arg
4070                 4075               4080

aca  tct aat agt gtc cac  gaa cct caa gtt tcg  tcc ttc ggg aac      61742
Thr  Ser Asn Ser Val His  Glu Pro Gln Val Ser  Ser Phe Gly Asn
4085                 4090               4095

ctt  ata gag cac cta ccg  gaa tat act gag aca  ttt gtg aat tat      61787
Leu  Ile Glu His Leu Pro  Glu Tyr Thr Glu Thr  Phe Val Asn Tyr
4100                 4105               4110

atg  aca aca cac gaa aat  aaa aac agt tat caa  ttt tgc tat gat      61832
Met  Thr Thr His Glu Asn  Lys Asn Ser Tyr Gln  Phe Cys Tyr Asp
4115                 4120               4125

cgt  cta cca cgc gac cag  ttt cat gct cgt ggg  ggg cgg tat gat      61877
Arg  Leu Pro Arg Asp Gln  Phe His Ala Arg Gly  Gly Arg Tyr Asp
4130                 4135               4140

caa  ggc gcc tta acg tca  cat tct gtt atg gat  gcg ctt ata cgg      61922
Gln  Gly Ala Leu Thr Ser  His Ser Val Met Asp  Ala Leu Ile Arg
4145                 4150               4155

ttg  cag gtc cta ccg cct  gca cct gga cag ttt  aat cct ggg gtt      61967
Leu  Gln Val Leu Pro Pro  Ala Pro Gly Gln Phe  Asn Pro Gly Val
4160                 4165               4170

aat  gac att att gat cgc  aat cat acc gca tat  gtg gac aag att      62012
Asn  Asp Ile Ile Asp Arg  Asn His Thr Ala Tyr  Val Asp Lys Ile
4175                 4180               4185

caa  cag gcg gcc gcg gcg  tat tta gaa cgg gcc  caa aac gtg ttt      62057
Gln  Gln Ala Ala Ala Ala  Tyr Leu Glu Arg Ala  Gln Asn Val Phe
4190                 4195               4200

ctt  atg gaa gac caa act  cta tta agg tta aca  att gac acg att      62102
Leu  Met Glu Asp Gln Thr  Leu Leu Arg Leu Thr  Ile Asp Thr Ile
4205                 4210               4215

acg  gcg tta tta tta tta  agg cgc tta tta tgg  aac ggg aac gta      62147
Thr  Ala Leu Leu Leu Leu  Arg Arg Leu Leu Trp  Asn Gly Asn Val
4220                 4225               4230

tac  gga gat aaa cta aaa  aat aat ttt caa ctg  ggt ttg att gtg      62192
Tyr  Gly Asp Lys Leu Lys  Asn Asn Phe Gln Leu  Gly Leu Ile Val
4235                 4240               4245

tca  gaa gca aca gga acc  cct acc aac aat gta  atc ttg cgc gga      62237
Ser  Glu Ala Thr Gly Thr  Pro Thr Asn Asn Val  Ile Leu Arg Gly
4250                 4255               4260

gcg  acg ggg ttt gat ggg  aag ttt aaa agc ggt  aat aat aac ttt      62282
Ala  Thr Gly Phe Asp Gly  Lys Phe Lys Ser Gly  Asn Asn Asn Phe
4265                 4270               4275

caa  ttt tta tgt gaa cga  tat ata gca cca ctg  tat acg tta aat      62327
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Gln     Phe Leu Cys Glu Arg  Tyr Ile Ala Pro Leu  Tyr Thr Leu Asn
4280                     4285                4290

cgg     acc aca gag ctg act  gaa atg ttt cct gga  tta gtt gct ctt        62372
Arg     Thr Thr Glu Leu Thr  Glu Met Phe Pro Gly  Leu Val Ala Leu
4295                     4300                4305

tgt     tta gac gcg cat acc  cag ctt agt cgt gga  agt tta gga aga        62417
Cys     Leu Asp Ala His Thr  Gln Leu Ser Arg Gly  Ser Leu Gly Arg
4310                     4315                4320

acc     gta ata gat att tct  tct gga cag tac caa  gat cgg ctc ata        62462
Thr     Val Ile Asp Ile Ser  Ser Gly Gln Tyr Gln  Asp Arg Leu Ile
4325                     4330                4335

agc     tta att gca ttg gaa  tta gaa cac cgc cga  caa aat gtt aca        62507
Ser     Leu Ile Ala Leu Glu  Leu Glu His Arg Arg  Gln Asn Val Thr
4340                     4345                4350

tcc     cta ccc ata gcc gcc  gtg gta tca ata cat  gac agt gtt atg        62552
Ser     Leu Pro Ile Ala Ala  Val Val Ser Ile His  Asp Ser Val Met
4355                     4360                4365

ttg     caa tat gaa cgg gga  ctt gga atg tta atg  cac caa ccg cgt        62597
Leu     Gln Tyr Glu Arg Gly  Leu Gly Met Leu Met  His Gln Pro Arg
4370                     4375                4380

gta     agg gcg gca ttg gaa  gaa agt cgc cgc ctt  gcg cag ttc aac        62642
Val     Arg Ala Ala Leu Glu  Glu Ser Arg Arg Leu  Ala Gln Phe Asn
4385                     4390                4395

gtt     aac agt gac tat gat  ctt cta tat ttt gtc  tgt ttg ggt gtc        62687
Val     Asn Ser Asp Tyr Asp  Leu Leu Tyr Phe Val  Cys Leu Gly Val
4400                     4405                4410

att     cct cag ttt gcc tcc  aca ccg tga gtattcacta tccggtccgt           62734
Ile     Pro Gln Phe Ala Ser  Thr Pro
4415                     4420

gggggtgttta ta atg gct gct  gaa gct gac gaa gag  aac tgt gaa gcg         62782
                Met Ala Ala  Glu Ala Asp Glu Glu  Asn Cys Glu Ala
                    4425                 4430

tta     tac gtg gct ggg tat  tta gcc tta tat tca  aag gac gaa ggg        62827
Leu     Tyr Val Ala Gly Tyr  Leu Ala Leu Tyr Ser  Lys Asp Glu Gly
4435                     4440                4445

gaa     tta aat att acc cca  gag att gtg cgg tcc  gct ttg ccg cct        62872
Glu     Leu Asn Ile Thr Pro  Glu Ile Val Arg Ser  Ala Leu Pro Pro
4450                     4455                4460

act     agt aaa ata cca ata  aac atc gat cat cga  aaa gac tgt gtc        62917
Thr     Ser Lys Ile Pro Ile  Asn Ile Asp His Arg  Lys Asp Cys Val
4465                     4470                4475

gtg     ggt gaa gta atc gca  atc att gag gac ata  cgc gga cct ttt        62962
Val     Gly Glu Val Ile Ala  Ile Ile Glu Asp Ile  Arg Gly Pro Phe
4480                     4485                4490

ttt     ttg ggt atc gtt aga  tgc cct caa cta cat  gcg gtg ctg ttt        63007
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Phe  Leu Gly Ile Val Arg  Cys Pro Gln Leu His  Ala Val Leu Phe
4495                4500                4505

gaa  gcg gcc cat tcg aat  ttt ttt gga aat aga  gat tct gta tta         63052
Glu  Ala Ala His Ser Asn  Phe Phe Gly Asn Arg  Asp Ser Val Leu
4510                4515                4520

tct  ccg cta gaa cgt gcg  tta tac ttg gtc aca  aat tac tta ccc         63097
Ser  Pro Leu Glu Arg Ala  Leu Tyr Leu Val Thr  Asn Tyr Leu Pro
4525                4530                4535

tcc  gta tcc ctg tct tca  aaa cga ttg tcc ccg  aat gag ata cca         63142
Ser  Val Ser Leu Ser Ser  Lys Arg Leu Ser Pro  Asn Glu Ile Pro
4540                4545                4550

gac  ggt aat ttt ttt acc  cat gtt gcg tta tgt  gtt gtt gga aga         63187
Asp  Gly Asn Phe Phe Thr  His Val Ala Leu Cys  Val Val Gly Arg
4555                4560                4565

cgc  gtt gga aca gtg gtc  aat tat gac tgt acc  ccg gaa tct tca         63232
Arg  Val Gly Thr Val Val  Asn Tyr Asp Cys Thr  Pro Glu Ser Ser
4570                4575                4580

att  gaa cca ttc cgg gtt  tta tcg atg gaa agt  aaa gcg cgg tta         63277
Ile  Glu Pro Phe Arg Val  Leu Ser Met Glu Ser  Lys Ala Arg Leu
4585                4590                4595

ttg  tcg ctg gtt aaa gac  tac gcg ggt tta aat  aaa gta tgg aag         63322
Leu  Ser Leu Val Lys Asp  Tyr Ala Gly Leu Asn  Lys Val Trp Lys
4600                4605                4610

gtt  agc gaa gat aaa ctc  gcc aag gtg tta tta  tcc aca gcc gtg         63367
Val  Ser Glu Asp Lys Leu  Ala Lys Val Leu Leu  Ser Thr Ala Val
4615                4620                4625

aac  aat atg ctt tta aga  gat aga tgg gac gtg  gtt gca aaa cgt         63412
Asn  Asn Met Leu Leu Arg  Asp Arg Trp Asp Val  Val Ala Lys Arg
4630                4635                4640

aga  cgc gaa gcc gga att  atg ggt cac gtt tat  ctt cag gct agc         63457
Arg  Arg Glu Ala Gly Ile  Met Gly His Val Tyr  Leu Gln Ala Ser
4645                4650                4655

acc  gga tat gga ctt gct  cgg ata acc aac gtt  aat ggg gtg gag         63502
Thr  Gly Tyr Gly Leu Ala  Arg Ile Thr Asn Val  Asn Gly Val Glu
4660                4665                4670

tct  aaa tta ccc aac gcg  ggt gtt ata aac gcc  aca ttc cac ccc         63547
Ser  Lys Leu Pro Asn Ala  Gly Val Ile Asn Ala  Thr Phe His Pro
4675                4680                4685

ggc  ggg ccc ata tac gat  ctc gcg ttg ggt gtt  ggg gaa tca aat         63592
Gly  Gly Pro Ile Tyr Asp  Leu Ala Leu Gly Val  Gly Glu Ser Asn
4690                4695                4700

gaa  gat tgt gaa aag act  gtt ccg cat tta aag  gtt acg cag ttg         63637
Glu  Asp Cys Glu Lys Thr  Val Pro His Leu Lys  Val Thr Gln Leu
4705                4710                4715

tgt  agg aac gac agc gat  atg gct tct gta gca  ggt aac gct agt         63682
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Cys Arg Asn Asp Ser Asp   Met Ala Ser Val Ala   Gly Asn Ala Ser
4720            4725                4730

aat atc tca cca cag ccc   ccg tcg ggc gtt cca   acc gga ggg gaa        63727
Asn Ile Ser Pro Gln Pro   Pro Ser Gly Val Pro   Thr Gly Gly Glu
4735            4740                4745

ttt gta ctg ata cct acc   gcg tat tat tca cag   ctg tta acc ggg        63772
Phe Val Leu Ile Pro Thr   Ala Tyr Tyr Ser Gln   Leu Leu Thr Gly
4750            4755                4760

cag act aaa aat ccg cag   gta tca att gga gct   cca aat aac gga        63817
Gln Thr Lys Asn Pro Gln   Val Ser Ile Gly Ala   Pro Asn Asn Gly
4765            4770                4775

cag tat atc gtc ggg cca   tat gga tct cca cac   ccg cct gcc ttc        63862
Gln Tyr Ile Val Gly Pro   Tyr Gly Ser Pro His   Pro Pro Ala Phe
4780            4785                4790

cca cct aat aca ggg ggt   tat ggt tgc cct ccg   gga cac ttc ggg        63907
Pro Pro Asn Thr Gly Gly   Tyr Gly Cys Pro Pro   Gly His Phe Gly
4795            4800                4805

gga ccg tac ggg ttt ccg   gga tat cca cca ccc   aat cgt ttg gaa        63952
Gly Pro Tyr Gly Phe Pro   Gly Tyr Pro Pro Pro   Asn Arg Leu Glu
4810            4815                4820

atg caa atg tcc gca ttt   atg aac gca ttg gcc   gcc gaa cgg ggt        63997
Met Gln Met Ser Ala Phe   Met Asn Ala Leu Ala   Ala Glu Arg Gly
4825            4830                4835

att gac ttg cag acc ccg   tgt gta aat ttt cca   gac aaa acc gat        64042
Ile Asp Leu Gln Thr Pro   Cys Val Asn Phe Pro   Asp Lys Thr Asp
4840            4845                4850

gtc cgt cgt cca gga aaa   cgg gat ttc aag agc   atg gat caa agg        64087
Val Arg Arg Pro Gly Lys   Arg Asp Phe Lys Ser   Met Asp Gln Arg
4855            4860                4865

gaa ttg gat tct ttt tat   agt ggg gag tct caa   atg gac gga gag        64132
Glu Leu Asp Ser Phe Tyr   Ser Gly Glu Ser Gln   Met Asp Gly Glu
4870            4875                4880

ttt ccc tca aat ata tat   ttt ccc ggt gaa cca   acg tat ata acg        64177
Phe Pro Ser Asn Ile Tyr   Phe Pro Gly Glu Pro   Thr Tyr Ile Thr
4885            4890                4895

cat cgg aga cgt cga gtt   tct cca tca tat tgg   cag agg aga cac        64222
His Arg Arg Arg Arg Val   Ser Pro Ser Tyr Trp   Gln Arg Arg His
4900            4905                4910

aga gtt tct aat ggt cag   cac gaa gag ctt gct   ggg gtt gtg gca        64267
Arg Val Ser Asn Gly Gln   His Glu Glu Leu Ala   Gly Val Val Ala
4915            4920                4925

aaa ctg caa cag gag gtt   aca gag cta aaa tca   caa aat ggg aca        64312
Lys Leu Gln Gln Glu Val   Thr Glu Leu Lys Ser   Gln Asn Gly Thr
4930            4935                4940

caa atg cct ttg tcg cac   cat aca aat ata cca   gag ggg aca cgg        64357
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Gln   Met Pro Leu Ser His   His Thr Asn Ile Pro   Glu Gly Thr Arg
4945                  4950                  4955

gat   cct cga ata tcg att   tta tta aaa cag ctt   caa agc gtt tcg        64402
Asp   Pro Arg Ile Ser Ile   Leu Leu Lys Gln Leu   Gln Ser Val Ser
4960                  4965                  4970

ggt   cta tgc tca tcc caa   aat aca aca agc acc   cca cat aca gat        64447
Gly   Leu Cys Ser Ser Gln   Asn Thr Thr Ser Thr   Pro His Thr Asp
4975                  4980                  4985

aca   gtt gga caa gat gta   aat gca gtg gag gcg   agt tcc aag gcc        64492
Thr   Val Gly Gln Asp Val   Asn Ala Val Glu Ala   Ser Ser Lys Ala
4990                  4995                  5000

cct   tta ata cag ggg tcc   acg gca gac gac gcc   gat atg ttt gca        64537
Pro   Leu Ile Gln Gly Ser   Thr Ala Asp Asp Ala   Asp Met Phe Ala
5005                  5010                  5015

aat   cag atg atg gtg ggg   cgg tgt taa ccaacaaata aaagtattac           64584
Asn   Gln Met Met Val Gly   Arg Cys
5020                  5025

attcataaaa ggcgtgtttg gttttttttt ttttgttaag cggtgtcgtg ttaaacaaac        64644

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          5045              5050                  5055

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Arg Glu Phe Leu  His Ser Tyr Lys Thr  Thr Met Ser Ser Phe   Gln
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Phe Leu Ala Pro  Lys Cys Leu Asp Glu  Asp Val Pro Met Glu   Glu
          5075              5080                  5085
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tac tgt aat gga   aaa gaa gtt ccg att   ctg gat ttt cgt tgt   tcc        74515
Tyr Cys Asn Gly   Lys Glu Val Pro Ile   Leu Asp Phe Arg Cys   Ser
          5105                  5110                  5115

agc ccc tgg cct   aga cgc gtg aat att   tgg ggg gaa atc gac   ttt        74560
Ser Pro Trp Pro   Arg Arg Val Asn Ile   Trp Gly Glu Ile Asp   Phe
          5120                  5125                  5130

cgt ggg gat aag   ttt gac ccc cgc ttt   aac aca ttc cat gta   tat        74605
Arg Gly Asp Lys   Phe Asp Pro Arg Phe   Asn Thr Phe His Val   Tyr
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Asp Ile Val Glu   Thr Thr Glu Ala Ala   Ser Asn Gly Asp Val   Ser
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Leu Gly Met Ser   Arg Cys Gly Lys Arg   Val Ala Val His Val   Tyr
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Gly Ile Cys Gln   Tyr Phe Tyr Ile Asn   Lys Ala Glu Val Asp   Thr
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Glu Cys Leu Arg   Ser Ser Met Ile Thr   Gln Asn Asp Ala Thr   Leu
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Asn Gly Asp Lys   Asn Ala Phe His Gly   Thr Ser Phe Lys Ser   Ala
          5240                  5245                  5250

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Ser Pro Glu Ser   Phe Arg Val Glu Val   Ile Glu Arg Thr Asp   Val
          5255                  5260                  5265

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ccc tca tct aaa   ttt aca aat tat ctt   tgt gat aac ttt cac   ccg        75055
Pro Ser Ser Lys   Phe Thr Asn Tyr Leu   Cys Asp Asn Phe His   Pro
          5285                  5290                  5295

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Glu Leu Lys Lys   Tyr Glu Gly Arg Val   Asp Ala Thr Thr Arg   Phe
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Lys Pro Gly Val   Asp Gly Glu Arg Val   Arg Val Arg Pro Ala   Ser
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Arg Gln Leu Thr   Leu Ser Asp Val Glu   Ile Asp Cys Met Ser   Asp
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Asn Leu Gln Ala   Ile Pro Asn Asp Asp   Ser Trp Pro Asp Tyr   Lys
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Leu Ala Phe Pro   Asp Ala Thr His Leu   Glu Asp Leu Val Ile   Gln
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Ile Ser Cys Leu   Leu Tyr Ser Ile Pro   Arg Gln Ser Leu Glu   His
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Ile Leu Leu Phe   Ser Leu Gly Ser Cys   Asp Leu Pro Gln Arg   Tyr
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Val Gln Glu Met   Lys Asp Ala Gly Leu   Pro Glu Pro Thr Val   Leu
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Glu Phe Asp Ser   Glu Phe Glu Leu Leu   Ile Ala Phe Met Thr   Leu
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Val Lys Gln Tyr   Ala Pro Glu Phe Ala   Thr Gly Tyr Asn Ile   Val
        5465                   5470                   5475

aat ttt gat tgg   gcg ttt att atg gag   aaa ctt aat tct ata   tac       75640
Asn Phe Asp Trp   Ala Phe Ile Met Glu   Lys Leu Asn Ser Ile   Tyr
        5480                   5485                   5490

agt ctc aag ctt   gat ggt tat ggc agt   ata aac cgt ggg ggt   ctg       75685
Ser Leu Lys Leu   Asp Gly Tyr Gly Ser   Ile Asn Arg Gly Gly   Leu
        5495                   5500                   5505

ttt aag ata tgg   gat gtt ggc aaa tcc   gga ttt cag cga cga   agc       75730
Phe Lys Ile Trp   Asp Val Gly Lys Ser   Gly Phe Gln Arg Arg   Ser
        5510                   5515                   5520

aag gta aag atc   aac ggt ctc ata tct   ctg gat atg tat gca   att       75775
Lys Val Lys Ile   Asn Gly Leu Ile Ser   Leu Asp Met Tyr Ala   Ile
        5525                   5530                   5535
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gca  act  gaa  aaa    tta  aaa  ctc  tcg    agt    tat  aaa  tta  gat    tcg    gtt           75820
Ala  Thr  Glu  Lys    Leu  Lys  Leu  Ser    Ser    Tyr  Lys  Leu  Asp    Ser    Val
               5540                    5545                    5550

gca  cgt  gaa  gct    cta  aat  gag  tcc    aag    aga  gat  ttg  ccc    tac    aaa           75865
Ala  Arg  Glu  Ala    Leu  Asn  Glu  Ser    Lys    Arg  Asp  Leu  Pro    Tyr    Lys
               5555                    5560                    5565

gac  att  ccg  gga    tat  tac  gct  agt    gga    ccg  aat  aca  cga    gga    att           75910
Asp  Ile  Pro  Gly    Tyr  Tyr  Ala  Ser    Gly    Pro  Asn  Thr  Arg    Gly    Ile
               5570                    5575                    5580

att  ggt  gaa  tat    tgt  ata  caa  gac    tcg    gct  ctt  gtg  ggg    aaa    ctg           75955
Ile  Gly  Glu  Tyr    Cys  Ile  Gln  Asp    Ser    Ala  Leu  Val  Gly    Lys    Leu
               5585                    5590                    5595

ttt  ttt  aaa  tat    tta  cca  cac  ctt    gag    tta  tcc  gcg  gtt    gca    agg           76000
Phe  Phe  Lys  Tyr    Leu  Pro  His  Leu    Glu    Leu  Ser  Ala  Val    Ala    Arg
               5600                    5605                    5610

cta  gct  aga  att    act  tta  acc  aag    gct    att  tac  gac  gga    cag    cag           76045
Leu  Ala  Arg  Ile    Thr  Leu  Thr  Lys    Ala    Ile  Tyr  Asp  Gly    Gln    Gln
               5615                    5620                    5625

gtt  agg  att  tac    acc  tgt  tta  tta    gga    ctg  gct  tcg  tct    cga    gga           76090
Val  Arg  Ile  Tyr    Thr  Cys  Leu  Leu    Gly    Leu  Ala  Ser  Ser    Arg    Gly
               5630                    5635                    5640

ttt  att  tta  ccc    gat  ggg  gga  tac    cca    gct  act  ttt  gaa    tat    aag           76135
Phe  Ile  Leu  Pro    Asp  Gly  Gly  Tyr    Pro    Ala  Thr  Phe  Glu    Tyr    Lys
               5645                    5650                    5655

gat  gtt  att  ccc    gat  gtc  ggg  gat    gtt    gag  gaa  gag  atg    gat    gaa           76180
Asp  Val  Ile  Pro    Asp  Val  Gly  Asp    Val    Glu  Glu  Glu  Met    Asp    Glu
               5660                    5665                    5670

gac  gag  agc  gtt    tct  ccc  act  ggt    acg    tca  agt  ggg  cga    aat    gta           76225
Asp  Glu  Ser  Val    Ser  Pro  Thr  Gly    Thr    Ser  Ser  Gly  Arg    Asn    Val
               5675                    5680                    5685

gga  tat  aaa  gga    gcc  agg  gtt  ttt    gac    cct  gat  acg  gga    ttt    tat           76270
Gly  Tyr  Lys  Gly    Ala  Arg  Val  Phe    Asp    Pro  Asp  Thr  Gly    Phe    Tyr
               5690                    5695                    5700

atc  gat  ccg  gtg    gtc  gta  ttg  gat    ttt    gca  agt  tta  tat    cca    agt           76315
Ile  Asp  Pro  Val    Val  Val  Leu  Asp    Phe    Ala  Ser  Leu  Tyr    Pro    Ser
               5705                    5710                    5715

ata  att  cag  gcc    cat  aac  tta  tgt    ttt    acc  acg  cta  acg    tta    aat           76360
Ile  Ile  Gln  Ala    His  Asn  Leu  Cys    Phe    Thr  Thr  Leu  Thr    Leu    Asn
               5720                    5725                    5730

ttt  gag  acg  gtt    aaa  cgt  ttg  aat    cca    tcc  gat  tat  gcc    acc    ttt           76405
Phe  Glu  Thr  Val    Lys  Arg  Leu  Asn    Pro    Ser  Asp  Tyr  Ala    Thr    Phe
               5735                    5740                    5745

aca  gtt  gga  gga    aaa  cgt  ctt  ttt    ttt    gtg  cgc  tct  aac    gtt    cga           76450
Thr  Val  Gly  Gly    Lys  Arg  Leu  Phe    Phe    Val  Arg  Ser  Asn    Val    Arg
               5750                    5755                    5760
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gaa agt ctg ctg    ggt gtt ctt tta aaa    gac tgg ttg gct atg    cgc         76495
Glu Ser Leu Leu    Gly Val Leu Leu Lys    Asp Trp Leu Ala Met    Arg
        5765                   5770                   5775

aag gct att aga    gcg cgc ata ccc gga    agt tct tca gat gaa    gca         76540
Lys Ala Ile Arg    Ala Arg Ile Pro Gly    Ser Ser Ser Asp Glu    Ala
        5780                   5785                   5790

gtg tta tta gac    aaa caa caa gcc gcg    ata aaa gta gtt tgt    aat         76585
Val Leu Leu Asp    Lys Gln Gln Ala Ala    Ile Lys Val Val Cys    Asn
        5795                   5800                   5805

tcc gtg tac ggt    ttt act gga gtt gcg    cag gga ttt ctg cca    tgt         76630
Ser Val Tyr Gly    Phe Thr Gly Val Ala    Gln Gly Phe Leu Pro    Cys
        5810                   5815                   5820

tta tac gta gcg    gcc act gtc act aca    att ggc cgt caa atg    tta         76675
Leu Tyr Val Ala    Ala Thr Val Thr Thr    Ile Gly Arg Gln Met    Leu
        5825                   5830                   5835

tta agt acc aga    gat tat att cat aat    aac tgg gcc gca ttt    gaa         76720
Leu Ser Thr Arg    Asp Tyr Ile His Asn    Asn Trp Ala Ala Phe    Glu
        5840                   5845                   5850

cgt ttt att aca    gcg ttt cca gac att    gaa agt agc gtt ctc    tcc         76765
Arg Phe Ile Thr    Ala Phe Pro Asp Ile    Glu Ser Ser Val Leu    Ser
        5855                   5860                   5865

caa aaa gcg tac    gag gta aag gtt ata    tat gga gat acg gat    tct         76810
Gln Lys Ala Tyr    Glu Val Lys Val Ile    Tyr Gly Asp Thr Asp    Ser
        5870                   5875                   5880

gtg ttt atc cga    ttc aag ggt gtt agt    gtt gag ggg ata gct    aaa         76855
Val Phe Ile Arg    Phe Lys Gly Val Ser    Val Glu Gly Ile Ala    Lys
        5885                   5890                   5895

atc ggc gag aaa    atg gca cat ata att    tca acg gct ctg ttt    tgt         76900
Ile Gly Glu Lys    Met Ala His Ile Ile    Ser Thr Ala Leu Phe    Cys
        5900                   5905                   5910

cct cct ata aag    ttg gag tgt gaa aaa    act ttt ata aaa ctt    ttg         76945
Pro Pro Ile Lys    Leu Glu Cys Glu Lys    Thr Phe Ile Lys Leu    Leu
        5915                   5920                   5925

ctt ata aca aag    aaa aag tac att ggg    gta att tac ggc gga    aag         76990
Leu Ile Thr Lys    Lys Lys Tyr Ile Gly    Val Ile Tyr Gly Gly    Lys
        5930                   5935                   5940

gtt tta atg aag    gga gtc gac ttg gtt    aga aaa aac aac tgt    caa         77035
Val Leu Met Lys    Gly Val Asp Leu Val    Arg Lys Asn Asn Cys    Gln
        5945                   5950                   5955

ttt att aac gat    tat gcc cgc aaa ctt    gta gaa ctg ttg tta    tat         77080
Phe Ile Asn Asp    Tyr Ala Arg Lys Leu    Val Glu Leu Leu Leu    Tyr
        5960                   5965                   5970

gac gac acc gtc    tcg cgt gct gcg gcg    gag gcg tcg tgt gtt    tcc         77125
Asp Asp Thr Val    Ser Arg Ala Ala Ala    Glu Ala Ser Cys Val    Ser
        5975                   5980                   5985
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att gct gaa tgg   aat aga cgg gcc atg   ccg tct ggg atg gcc   ggg      77170
Ile Ala Glu Trp   Asn Arg Arg Ala Met   Pro Ser Gly Met Ala   Gly
          5990                   5995                 6000

ttt gga cgc ata   att gca gat gca cat   cgc cag att aca tca   ccc      77215
Phe Gly Arg Ile   Ile Ala Asp Ala His   Arg Gln Ile Thr Ser   Pro
          6005                   6010                 6015

aaa ttg gat att   aat aag ttt gtt atg   acg gcc gag ctt agt   cgt      77260
Lys Leu Asp Ile   Asn Lys Phe Val Met   Thr Ala Glu Leu Ser   Arg
          6020                   6025                 6030

cca cca tcc gcc   tac ata aac cgt cgc   ttg gct cac tta aca   gta      77305
Pro Pro Ser Ala   Tyr Ile Asn Arg Arg   Leu Ala His Leu Thr   Val
          6035                   6040                 6045

tat tat aaa tta   gta atg aga cag ggt   caa atc cca aac gtt   cga      77350
Tyr Tyr Lys Leu   Val Met Arg Gln Gly   Gln Ile Pro Asn Val   Arg
          6050                   6055                 6060

gaa cgc atc cct   tat gtt att gtg gcc   ccc aca gac gaa gtg   gag      77395
Glu Arg Ile Pro   Tyr Val Ile Val Ala   Pro Thr Asp Glu Val   Glu
          6065                   6070                 6075

gct gat gca aaa   agt gta gct ttg cta   cgt gga gat cct tta   cag      77440
Ala Asp Ala Lys   Ser Val Ala Leu Leu   Arg Gly Asp Pro Leu   Gln
          6080                   6085                 6090

aat acc gca ggt   aaa cgg tgt ggg gaa   gca aag cgt aag tta   ata      77485
Asn Thr Ala Gly   Lys Arg Cys Gly Glu   Ala Lys Arg Lys Leu   Ile
          6095                   6100                 6105

ata tct gac tta   gcg gaa gat ccc att   cac gta aca tca cac   ggg      77530
Ile Ser Asp Leu   Ala Glu Asp Pro Ile   His Val Thr Ser His   Gly
          6110                   6115                 6120

ctg tct tta aac   att gac tat tat ttt   tct cat ctc att ggg   acg      77575
Leu Ser Leu Asn   Ile Asp Tyr Tyr Phe   Ser His Leu Ile Gly   Thr
          6125                   6130                 6135

gcg agt gta act   ttt aag gcg tta ttt   gga aac gac act aaa   ctc      77620
Ala Ser Val Thr   Phe Lys Ala Leu Phe   Gly Asn Asp Thr Lys   Leu
          6140                   6145                 6150

aca gaa cgg ctt   tta aaa cgt ttt att   cca gag aca cga gtt   gtt      77665
Thr Glu Arg Leu   Leu Lys Arg Phe Ile   Pro Glu Thr Arg Val   Val
          6155                   6160                 6165

aac gtt aaa atg   cta aac cgc ttg cag   gcg gca ggc ttt gtt   tgt      77710
Asn Val Lys Met   Leu Asn Arg Leu Gln   Ala Ala Gly Phe Val   Cys
          6170                   6175                 6180

ata cac gcc ccg   tgc tgg gat aat aaa   atg aac act gaa gct   gaa      77755
Ile His Ala Pro   Cys Trp Asp Asn Lys   Met Asn Thr Glu Ala   Glu
          6185                   6190                 6195

atc acc gag gag   gaa caa agt cat caa   ata atg cgt aga gtc   ttt      77800
Ile Thr Glu Glu   Glu Gln Ser His Gln   Ile Met Arg Arg Val   Phe
          6200                   6205                 6210
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tgt att cca aaa  gca att ctc cat caa  agt taa ggtcacacat              77843
Cys Ile Pro Lys  Ala Ile Leu His Gln  Ser
         6215                 6220

tttacagtaa acgtccgatg ttccaatgga tggcaccaca gtctctgttt gttgttctgg    77903

gttgcgacat accgacagta aaaatgttgt ctgccaaacg tgtgcgacta ttttataccc    77963

ccgacacgcg gcctgtatat gatcgattag tctgtaatgg aggtgaacag atttccccgg    78023

aaatataaca tacatcataa accctccggc atctccatca cgataaaaaa gtacgcgtat    78083

atctcgcatg ccccctccc tcataatatg atacataaaa ataattccg gttgtgccaa      78143

tacgctcgac aatagggtt cagcggacgc tgcttgcatg ttggctcggt ctgatagcgc      78203

caaaatggat gcaagaaaca cacgatattc gtatatgttg ttaagctgct gaacatatgc    78263

tagtatcaga gccgcccgat cggttcgaca tagacgcggt ctccagatg cagtgcatgt      78323

cggacaataa cctccgagac ctaaatgata acccattccg gataacgaca ggcagttatc    78383

cgccactgtc tgacccaagt taaacggaag ggtgacaggg gtcgtcttaa taattggcac    78443

gattaagcct ctaacggtag ctagttcttc tggggggac cttgcgatgt aattaaaata      78503

atggcggtac acagaccgct cctttgacat aagtttttcct cgaatggttt gacggcggca    78563

tggcgttctg gagcgtacac gcatcgaagg cccgctccga gatacggatt tatatcgcct    78623

agacatactt cgatagggtg tgttcgaggg agaccagcga tattgcatgt cgtcgaagca    78683

taagtcctcc atctcgtatg aatgcggcat tggcggttgg tttgcgtgga aaaatctggt    78743

aggctttaaa tgcatacgcc aatgtccaca ggccagcaca tacacgacct tcaaatctgt    78803

tttgtgcagc cagttgggct ttatataact ccaacacttc cttatccgcg gttgtaggat    78863

gggcaaataa aattttaggg tttgtctgta attccgagag agcgcatagg agatcgcaaa    78923

ataaatgttt atatacggcc tcggaacctg ctgcttttac aatggttatg aatcgaccct    78983

catcattaaa tggaaattta agtttaatgg ggttatctag gctccatgca ttgattacag    79043

gttcgataca gtcaaataaa cttgtgttat ttgctgagta tgctaatata tcccttttaa    79103

actgccgcaa agcgatccaa tagtgcccta tggttaataa acaacataac atgcattcgg    79163

tattcgtgcg accacggcac tttgcgtttt ttaaggtagt taacaaaata ggcccaaatg    79223

ctacttcggg acaggcatcc tcgctcgtaa atttggaaaa ttgttttgga acgtccctgg    79283

agttttcaat ccggttcgcc tgccagtatg atttaacaca tccaacgcga gtttctatag    79343

cacaatttgt acgctcgtct acattccaag tagcaacccc actcagtaat aataaagcca    79403

agtctgcgta accccaagct gcttctacgt aagacgattt tttaagtttg tctattaata    79463

tatcttcaaa ctctatatcc tctttttaatg cacgttccgc gcaggtaatc atcccacttg    79523
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tgcgatgttc cgatgatgaa cagtcaacca tccgcgcgca atctttccaa ttagccaagg    79583

cggccgctaa aggttgaggg cctccagtca gtccgtcctg attaaagtaa aatgacttac    79643

gcgtttcggt ttcgtctaaa cgagacgtgc tgatcgatag taatgcagcc ctaactaccg    79703

cctgtacaaa aaaggagtaa ttggaatatc ttactttgtt ggccatttcc ttacgggggg    79763

gcggtcgtat acctggtaac cctccatcgg tacgaaaaca tacatgcaaa aaaaaatgtc    79823

tttgtatatc taacagggaa agcgtgcgcc tggcaaagga cccaaccaaa gtaacgttat    79883

aacggcacag gtagtaacga tccataagat acacaaattc aaaggcagcg ctaaaagtga    79943

caactgcaca gggcgggggat gccagacttt tcatacataa catggcgtag tccgcaaccc    80003

attccggtgt cagtccaaat ttacgtttat acaaatcaag cgttctgcag accaaacagg    80063

ctctgtctaa cgccaaaacg tctccaattt cttctataaa ttcagtggta cttgaggtca    80123

tttcattatc cacacctacc gccgaagagg cctcataagt gacgttgttt tctattgcac    80183

ggggaacatt tattaagtgg gaggcaaata acaattctga aaataacaaa tcgttttta    80243

gcagaagggc tggattataa gcg atg tac gaa tcg  gaa aat gcg tcg gaa       80293
                          Met Tyr Glu Ser  Glu Asn Ala Ser Glu
                              6225                          6230

cac cat ccg gaa tta  gaa gat gta ttt tcg  gag aat acg ggc gat        80338
His His Pro Glu Leu  Glu Asp Val Phe Ser  Glu Asn Thr Gly Asp
            6235                6240                      6245

tcg aat cca tcc atg  ggt tct tct gat tct  acc cga tcc atc tct        80383
Ser Asn Pro Ser Met  Gly Ser Ser Asp Ser  Thr Arg Ser Ile Ser
            6250                6255                      6260

ggg atg agg gcc cgc  gat tta att aca gac  acc gat gtt aat cta        80428
Gly Met Arg Ala Arg  Asp Leu Ile Thr Asp  Thr Asp Val Asn Leu
            6265                6270                      6275

tta aat atc gat gca  ctg gag tca aag tat  ttt cct gct gat agc        80473
Leu Asn Ile Asp Ala  Leu Glu Ser Lys Tyr  Phe Pro Ala Asp Ser
            6280                6285                      6290

acc ttt act ctt tcc  gtt tgg ttt gaa aat  tta att ccc ccg gaa        80518
Thr Phe Thr Leu Ser  Val Trp Phe Glu Asn  Leu Ile Pro Pro Glu
            6295                6300                      6305

ata gaa gca att cta  cct aca act gac gct  caa tta aat tat ata        80563
Ile Glu Ala Ile Leu  Pro Thr Thr Asp Ala  Gln Leu Asn Tyr Ile
            6310                6315                      6320

tca ttt acc agt cgc  ctg gcg tcc gtt tta  aaa cat aaa gaa agt        80608
Ser Phe Thr Ser Arg  Leu Ala Ser Val Leu  Lys His Lys Glu Ser
            6325                6330                      6335

aac gat tca gaa aaa  tct gct tat gtt gtt  cca tgt gaa cat agt        80653
Asn Asp Ser Glu Lys  Ser Ala Tyr Val Val  Pro Cys Glu His Ser
            6340                6345                      6350
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gcc agc gtg acc cgt   cgc cgt gaa cgc ttt   gcg gga gtc atg gcc           80698
Ala Ser Val Thr Arg   Arg Arg Glu Arg Phe   Ala Gly Val Met Ala
        6355                   6360                   6365

aaa ttt cta gat ttg   cat gaa ata ttg aag   gat gct taa tacatgggga       80747
Lys Phe Leu Asp Leu   His Glu Ile Leu Lys   Asp Ala
        6370                   6375

aaataaacgc attaataagt cgtcagggg tggatcactc caaactcctc ctatatccca         80807

cgataaatgg tctaaatact tcacgcgtgt gccttggttt gcaaccttag atcaat atg        80866
                                                                    Met

tca cgg aga acg tat gta cgg   agt gaa cgc agg agg   ggt tgc gga          80911
Ser Arg Arg Thr Tyr Val Arg   Ser Glu Arg Arg Arg   Gly Cys Gly
        6380                   6385                   6390

gat aat ctt tta caa cgt att   cgg ttg gtg gta cca   agc gct ctt          80956
Asp Asn Leu Leu Gln Arg Ile   Arg Leu Val Val Pro   Ser Ala Leu
        6395                   6400                   6405

caa tgt tgc gat ggg gat ctt   cca ata ttt gat cca   caa cgc ccc          81001
Gln Cys Cys Asp Gly Asp Leu   Pro Ile Phe Asp Pro   Gln Arg Pro
        6410                   6415                   6420

ccc gcc cgt tgt gtt ttt cag   ttt aac ggc gaa gac   aac gta tcc          81046
Pro Ala Arg Cys Val Phe Gln   Phe Asn Gly Glu Asp   Asn Val Ser
        6425                   6430                   6435

gaa gcc ttt ccg gta gag tat   att atg cgt tta atg   gcg aat tgg          81091
Glu Ala Phe Pro Val Glu Tyr   Ile Met Arg Leu Met   Ala Asn Trp
        6440                   6445                   6450

gcg caa gta gat tgt gac cct   tac ata aaa att caa   aat acg ggg          81136
Ala Gln Val Asp Cys Asp Pro   Tyr Ile Lys Ile Gln   Asn Thr Gly
        6455                   6460                   6465

gtg tct gtg cta ttt caa ggt   ttt ttt ttt cgt ccg   act aac gca          81181
Val Ser Val Leu Phe Gln Gly   Phe Phe Phe Arg Pro   Thr Asn Ala
        6470                   6475                   6480

cca gtg gct gaa gtg tcc att   gac agt aat aac gtg   att ctt agt          81226
Pro Val Ala Glu Val Ser Ile   Asp Ser Asn Asn Val   Ile Leu Ser
        6485                   6490                   6495

tca acg tta agt acc ggt atc   aac cta tct gct ttg   gaa tca att          81271
Ser Thr Leu Ser Thr Gly Ile   Asn Leu Ser Ala Leu   Glu Ser Ile
        6500                   6505                   6510

aaa cga ggt ggg ggt att gac   cgc cga cct ctc cag   gct tta atg          81316
Lys Arg Gly Gly Gly Ile Asp   Arg Arg Pro Leu Gln   Ala Leu Met
        6515                   6520                   6525

tgg gtg aac tgc ttt gtg cga   atg cca tat gtt cag   tta tcc ttt          81361
Trp Val Asn Cys Phe Val Arg   Met Pro Tyr Val Gln   Leu Ser Phe
        6530                   6535                   6540

cgt ttt atg gga ccg gaa gat   cca tct cgc acc att   aaa ctt atg          81406
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    Arg Phe Met Gly Pro Glu Asp  Pro Ser Arg Thr Ile  Lys Leu Met
        6545                6550            6555

    gcc cgc gcc acg gat gca tac  atg tat aag gaa act  ggc aat aat      81451
    Ala Arg Ala Thr Asp Ala Tyr  Met Tyr Lys Glu Thr  Gly Asn Asn
        6560            6565            6570

    ttg gat gaa tat ata cgc tgg  cgg cct tca ttc aga  tcc cca ccc      81496
    Leu Asp Glu Tyr Ile Arg Trp  Arg Pro Ser Phe Arg  Ser Pro Pro
        6575            6580            6585

    gag aac gga agt cca aac acg  tct gtt caa atg caa  agt gac att      81541
    Glu Asn Gly Ser Pro Asn Thr  Ser Val Gln Met Gln  Ser Asp Ile
        6590            6595            6600

    aaa cct gcg tta ccc gat acc  caa act acg cgt gtc  tgg aaa ctt      81586
    Lys Pro Ala Leu Pro Asp Thr  Gln Thr Thr Arg Val  Trp Lys Leu
        6605            6610            6615

    gct cta ccc gta gct aac gtg  aca tat gcc ctg ttc  att gta att      81631
    Ala Leu Pro Val Ala Asn Val  Thr Tyr Ala Leu Phe  Ile Val Ile
        6620            6625            6630

    gta ctg gta gtt gta tta ggg  gcg gtg ctt ttc tgg  aaa taa          81673
    Val Leu Val Val Val Leu Gly  Ala Val Leu Phe Trp  Lys Lys
        6635            6640            6645

    attgcctttc cgtacatatc ctgcgcagat gtacgtgtat gctgttatcg attgtcccgt   81733

    aaactaataa acg atg aca caa ccc  gca tcg tct cgt gta  gtc ttt gat     81782
                   Met Thr Gln Pro  Ala Ser Ser Arg Val  Val Phe Asp
                       6650                6655

    ccc agc aac ccc acc aca ttt  tcg gtg gaa gca att  gcg gct tac      81827
    Pro Ser Asn Pro Thr Thr Phe  Ser Val Glu Ala Ile  Ala Ala Tyr
        6660            6665            6670

    acc ccc gtt gct tta ata cga  ctt tta aac gcc agt  gga cct ttg      81872
    Thr Pro Val Ala Leu Ile Arg  Leu Leu Asn Ala Ser  Gly Pro Leu
        6675            6680            6685

    caa cct ggt cac cgt gtg gac  atc gct gat gcc aga  agc att tac      81917
    Gln Pro Gly His Arg Val Asp  Ile Ala Asp Ala Arg  Ser Ile Tyr
        6690            6695            6700

    acc gtg gga gcc gcg gcc agt  gcc gcg cgt gca cgc  gct aac cat      81962
    Thr Val Gly Ala Ala Ala Ser  Ala Ala Arg Ala Arg  Ala Asn His
        6705            6710            6715

    aat gca aat acg ata cgc cga  acg gcc atg ttt gcc  gag act gac      82007
    Asn Ala Asn Thr Ile Arg Arg  Thr Ala Met Phe Ala  Glu Thr Asp
        6720            6725            6730

    cct atg aca tgg tta aga cca  acg gtt ggc tta aaa  cgt acg ttt      82052
    Pro Met Thr Trp Leu Arg Pro  Thr Val Gly Leu Lys  Arg Thr Phe
        6735            6740            6745

    aac ccg cgt att ata cga cca  caa ccc cca aat cca  tcc atg agt      82097
    Asn Pro Arg Ile Ile Arg Pro  Gln Pro Pro Asn Pro  Ser Met Ser
        6750            6755            6760
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Leu Gly  Ile Ser Gly Pro Thr  Ile Leu Pro Gln Lys  Thr Gln Ser
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        6895                6900               6905

aat aac cgt  ttt att caa ata ggg  aac ggg ctt cat atg  act tat          94532
Asn Asn Arg  Phe Ile Gln Ile Gly  Asn Gly Leu His Met  Thr Tyr
        6910                6915               6920

gct ccg ggc  ttc ttc gga aat tgg  agt cgc gat tta aca  att ggc          94577
Ala Pro Gly  Phe Phe Gly Asn Trp  Ser Arg Asp Leu Thr  Ile Gly
        6925                6930               6935

cct cgc ttt  gga ggt ctg aac aaa  caa ccg ata cat gta  cca cca          94622
Pro Arg Phe  Gly Gly Leu Asn Lys  Gln Pro Ile His Val  Pro Pro
        6940                6945               6950

aaa cgt aca  gaa acc gcg tct att  caa gta acc ccc cgt  tca att          94667
Lys Arg Thr  Glu Thr Ala Ser Ile  Gln Val Thr Pro Arg  Ser Ile
        6955                6960               6965

gtt att aat  cgt atg aac aac att  caa ata aat cca act  tca att          94712
Val Ile Asn  Arg Met Asn Asn Ile  Gln Ile Asn Pro Thr  Ser Ile
        6970                6975               6980

ggt aac ccg  caa gtt acc att aga  ctc ccg tta aat aat  ttt aaa          94757
Gly Asn Pro  Gln Val Thr Ile Arg  Leu Pro Leu Asn Asn  Phe Lys
        6985                6990               6995

tca acg aca  cag cta atc caa caa  gtg tca tta acc gat  ttt ttt          94802
Ser Thr Thr  Gln Leu Ile Gln Gln  Val Ser Leu Thr Asp  Phe Phe
        7000                7005               7010

cgt ccg gac  att gag cat gct ggg  tca atc gtc tta atc  ctt cgt          94847
Arg Pro Asp  Ile Glu His Ala Gly  Ser Ile Val Leu Ile  Leu Arg
        7015                7020               7025

cat cca tct  gac atg att gga gaa  gct aat aca ctt aca  cag gct          94892
His Pro Ser  Asp Met Ile Gly Glu  Ala Asn Thr Leu Thr  Gln Ala
        7030                7035               7040

gga cgt gac  ccc gat gta cta cta  gag ggt tta cga aac  cta ttc          94937
Gly Arg Asp  Pro Asp Val Leu Leu  Glu Gly Leu Arg Asn  Leu Phe
        7045                7050               7055

aat gcc tgc  acg gct cct tgg acc  gtt gga gaa ggt ggg  ggg ctt          94982
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        Asn Ala Cys  Thr Ala Pro Trp Thr  Val Gly Glu Gly Gly  Gly Leu
            7060             7065               7070

aga gca tat  gta acg tca tta agt  ttc atc gcc gca tgc  cgg gca        95027
Arg Ala Tyr  Val Thr Ser Leu Ser  Phe Ile Ala Ala Cys  Arg Ala
        7075             7080               7085

gaa gaa tat  acg gat aaa cag gca  gcg gat gcc aac aga  aca gca        95072
Glu Glu Tyr  Thr Asp Lys Gln Ala  Ala Asp Ala Asn Arg  Thr Ala
        7090             7095               7100

att gtt tct  gcc tat gga tgc agt  cgt atg gaa acg cgg  ctc ata        95117
Ile Val Ser  Ala Tyr Gly Cys Ser  Arg Met Glu Thr Arg  Leu Ile
        7105             7110               7115

agg ttt tcg  gag tgt tta cgt gcg  atg gta caa tgt cat  gta ttt        95162
Arg Phe Ser  Glu Cys Leu Arg Ala  Met Val Gln Cys His  Val Phe
        7120             7125               7130

cca cat cga  ttt ata agt ttt ttt  ggg tcc ctg ctg gaa  tat acc        95207
Pro His Arg  Phe Ile Ser Phe Phe  Gly Ser Leu Leu Glu  Tyr Thr
        7135             7140               7145

att cag gat  aat tta tgc aat ata  acc gcc gtg gcc aaa  ggt ccc        95252
Ile Gln Asp  Asn Leu Cys Asn Ile  Thr Ala Val Ala Lys  Gly Pro
        7150             7155               7160

caa gaa gct  gca cgt aca gac aaa  act tca act cgc agg  gtc aca        95297
Gln Glu Ala  Ala Arg Thr Asp Lys  Thr Ser Thr Arg Arg  Val Thr
        7165             7170               7175

gcc aac atc  ccg gcc tgc gta ttt  tgg gac gtt gac aaa  gat tta        95342
Ala Asn Ile  Pro Ala Cys Val Phe  Trp Asp Val Asp Lys  Asp Leu
        7180             7185               7190

cat ctt tcc  gcg gac gga ctg aag  cat gtg ttc ttg gtt  ttt gta        95387
His Leu Ser  Ala Asp Gly Leu Lys  His Val Phe Leu Val  Phe Val
        7195             7200               7205

tat aca cag  cga cgc caa cga gaa  ggt gta aga ctg cat  ctt gca        95432
Tyr Thr Gln  Arg Arg Gln Arg Glu  Gly Val Arg Leu His  Leu Ala
        7210             7215               7220

tta agc caa  cta aac gaa caa tgt  ttt ggt cgt ggt att  ggc ttc        95477
Leu Ser Gln  Leu Asn Glu Gln Cys  Phe Gly Arg Gly Ile  Gly Phe
        7225             7230               7235

ctg tta gga  cgc ata cga gct gaa  aat gcc gcc tgg ggg  act gaa        95522
Leu Leu Gly  Arg Ile Arg Ala Glu  Asn Ala Ala Trp Gly  Thr Glu
        7240             7245               7250

ggg gtt gca  aat acc cac cag cca  tat aac aca agg gcg  ttg ccg        95567
Gly Val Ala  Asn Thr His Gln Pro  Tyr Asn Thr Arg Ala  Leu Pro
        7255             7260               7265

ctt gtg cag  tta tcc aat gac ccg  aca agc cct cga tgt  agt att        95612
Leu Val Gln  Leu Ser Asn Asp Pro  Thr Ser Pro Arg Cys  Ser Ile
        7270             7275               7280

ggc gaa att  aca gga gta aat tgg  aac ttg gct aga cag  cga ttg        95657
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Gly Glu Ile   Thr Gly Val Asn Trp   Asn Leu Ala Arg Gln   Arg Leu
    7285                      7290                  7295

tat caa tgg   acc ggc gat ttt cgg   gga ctt ccc aca caa   tta tcc        95702
Tyr Gln Trp   Thr Gly Asp Phe Arg   Gly Leu Pro Thr Gln   Leu Ser
    7300                      7305                  7310

tgc atg tat   gcg gca tat acg tta   att gga aca att cca   tca gag        95747
Cys Met Tyr   Ala Ala Tyr Thr Leu   Ile Gly Thr Ile Pro   Ser Glu
    7315                      7320                  7325

tct gtg cgt   tat aca aga cgc atg   gaa cgg ttc gga ggt   tat aac        95792
Ser Val Arg   Tyr Thr Arg Arg Met   Glu Arg Phe Gly Gly   Tyr Asn
    7330                      7335                  7340

gtg cca act   att tgg tta gag ggg   gtt gtg tgg ggg ggt   aca aat        95837
Val Pro Thr   Ile Trp Leu Glu Gly   Val Val Trp Gly Gly   Thr Asn
    7345                      7350                  7355

aca tgg aac   gaa tgt tat tat taa   agcatgtatg taaaataaac tgaatttaac    95891
Thr Trp Asn   Glu Cys Tyr Tyr
    7360

atagcgtggg ttttgcgtga tattatatac tgggGagggg caggctgtac gtaaccatat       95951

ataagggagt ctacaatatt gtagaactaa ctcagctgtg agtttagggt ttaaaggttt       96011

attccggagc ctaaatacgt tatccgtt atg   gag ttc aaa aga att   ttt aat       96063
                               Met   Glu Phe Lys Arg Ile   Phe Asn
                                   7365                  7370

acg gtt cat   gac att ata aac cga   tta tgt caa cat ggc   tac aag        96108
Thr Val His   Asp Ile Ile Asn Arg   Leu Cys Gln His Gly   Tyr Lys
    7375                      7380                  7385

gaa tac atc   att ccg ccc gaa tca   acc aca ccg gtg gaa   tta atg        96153
Glu Tyr Ile   Ile Pro Pro Glu Ser   Thr Thr Pro Val Glu   Leu Met
    7390                      7395                  7400

gag tat att   agc act atc gtc tca   aaa ctt aag gcg gtg   acg cga        96198
Glu Tyr Ile   Ser Thr Ile Val Ser   Lys Leu Lys Ala Val   Thr Arg
    7405                      7410                  7415

caa gat gag   cga gtg tac cga tgt   tgt gga gaa ctt atc   cat tgc        96243
Gln Asp Glu   Arg Val Tyr Arg Cys   Cys Gly Glu Leu Ile   His Cys
    7420                      7425                  7430

cgt att aac   cta cga tcc gtt tcc   atg gaa acg tgg ttg   act tcc        96288
Arg Ile Asn   Leu Arg Ser Val Ser   Met Glu Thr Trp Leu   Thr Ser
    7435                      7440                  7445

cca att ctc   tgt tta act ccc cga   gtc cgc caa gca att   gaa ggg        96333
Pro Ile Leu   Cys Leu Thr Pro Arg   Val Arg Gln Ala Ile   Glu Gly
    7450                      7455                  7460

cgg agg gac   gaa att cgt cgg gct   ata tta gaa ccg ttt   ttg aaa        96378
Arg Arg Asp   Glu Ile Arg Arg Ala   Ile Leu Glu Pro Phe   Leu Lys
    7465                      7470                  7475

gat caa tac   ccc gct tta gct acc   ctt gga cta cag tct   gct tta        96423
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Asp Gln Tyr  Pro Ala Leu Ala Thr  Leu Gly Leu Gln Ser  Ala Leu
    7480              7485                   7490

aag tac gaa  gac ttt tat tta act  aag tta gag gaa ggt  aaa tta      96468
Lys Tyr Glu  Asp Phe Tyr Leu Thr  Lys Leu Glu Glu Gly  Lys Leu
    7495              7500                   7505

gag tcg ctt  tgc caa ttc ttt tta  aga ctg gcg gcc acc  gtg aca      96513
Glu Ser Leu  Cys Gln Phe Phe Leu  Arg Leu Ala Ala Thr  Val Thr
    7510              7515                   7520

aca gaa atc  gta aac ctg cct aaa  atc gca act ctt att  ccc gga      96558
Thr Glu Ile  Val Asn Leu Pro Lys  Ile Ala Thr Leu Ile  Pro Gly
    7525              7530                   7535

ata aat gat  ggt tat aca tgg act  gat gtc tgt cgg gta  ttt ttc      96603
Ile Asn Asp  Gly Tyr Thr Trp Thr  Asp Val Cys Arg Val  Phe Phe
    7540              7545                   7550

aca gcg ttg  gca tgt cag aaa att  gtc ccg gct aca ccg  gtt atg      96648
Thr Ala Leu  Ala Cys Gln Lys Ile  Val Pro Ala Thr Pro  Val Met
    7555              7560                   7565

atg ttt tta  ggt cga gag acc ggg  gca acg gcc agt tgt  tat tta      96693
Met Phe Leu  Gly Arg Glu Thr Gly  Ala Thr Ala Ser Cys  Tyr Leu
    7570              7575                   7580

atg gac ccg  gaa tcc atc act gtt  ggg aga gct gtt cga  gct atc      96738
Met Asp Pro  Glu Ser Ile Thr Val  Gly Arg Ala Val Arg  Ala Ile
    7585              7590                   7595

aca ggc gat  gtg gga acg gta tta  caa agt cga ggt gga  gtg gga      96783
Thr Gly Asp  Val Gly Thr Val Leu  Gln Ser Arg Gly Gly  Val Gly
    7600              7605                   7610

att tct cta  cag agt ctg aat tta  ata cct acg gaa aat  caa acg      96828
Ile Ser Leu  Gln Ser Leu Asn Leu  Ile Pro Thr Glu Asn  Gln Thr
    7615              7620                   7625

aaa ggt ctt  ctt gca gtt tta aaa  ctt tta gat tgc atg  gtt atg      96873
Lys Gly Leu  Leu Ala Val Leu Lys  Leu Leu Asp Cys Met  Val Met
    7630              7635                   7640

gca att aac  agt gat tgt gaa cga  cca act gga gtt tgt  gtt tac      96918
Ala Ile Asn  Ser Asp Cys Glu Arg  Pro Thr Gly Val Cys  Val Tyr
    7645              7650                   7655

ata gaa cca  tgg cac gtc gat cta  caa act gtt ttg gcc  aca cgt      96963
Ile Glu Pro  Trp His Val Asp Leu  Gln Thr Val Leu Ala  Thr Arg
    7660              7665                   7670

gga atg ttg  gtt cgt gat gaa ata  ttt cga tgt gat aac  ata ttt      97008
Gly Met Leu  Val Arg Asp Glu Ile  Phe Arg Cys Asp Asn  Ile Phe
    7675              7680                   7685

tgt tgt tta  tgg acc cca gat tta  ttt ttt gaa aga tac  cta agc      97053
Cys Cys Leu  Trp Thr Pro Asp Leu  Phe Phe Glu Arg Tyr  Leu Ser
    7690              7695                   7700

tat cta aaa  ggg gct agt aat gtt  cag tgg act ctt ttt  gat aac      97098
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Tyr Leu Lys Gly Ala Ser Asn Val Gln Trp Thr Leu Phe Asp Asn
7705   7710   7715

aga gcc gat atc ctt cga aca tta cac ggg gag gca ttc act tca   97143
Arg Ala Asp Ile Leu Arg Thr Leu His Gly Glu Ala Phe Thr Ser
7720   7725   7730

acc tat tta cgt tta gag aga gaa gga tta ggc gtt tct tct gtt   97188
Thr Tyr Leu Arg Leu Glu Arg Glu Gly Leu Gly Val Ser Ser Val
7735   7740   7745

ccc att caa gat atc gca ttc aca atc ata cgc agt gct gct gta   97233
Pro Ile Gln Asp Ile Ala Phe Thr Ile Ile Arg Ser Ala Ala Val
7750   7755   7760

aca gga agc ccc ttt tta atg ttc aaa gat gcc tgt aat cgt aat   97278
Thr Gly Ser Pro Phe Leu Met Phe Lys Asp Ala Cys Asn Arg Asn
7765   7770   7775

tat cat atg aat acc caa gga aat gct atc acg ggg tca aat ttg   97323
Tyr His Met Asn Thr Gln Gly Asn Ala Ile Thr Gly Ser Asn Leu
7780   7785   7790

tgt acg gaa att gtt caa aag gca gac gct cat caa cat ggc gta   97368
Cys Thr Glu Ile Val Gln Lys Ala Asp Ala His Gln His Gly Val
7795   7800   7805

tgt aat ctt gcc agc ata aat ctt aca acg tgc tta tcc aaa ggc   97413
Cys Asn Leu Ala Ser Ile Asn Leu Thr Thr Cys Leu Ser Lys Gly
7810   7815   7820

cca gtg tca ttt aat tta aac gac ctt caa ttg aca gca aga acg   97458
Pro Val Ser Phe Asn Leu Asn Asp Leu Gln Leu Thr Ala Arg Thr
7825   7830   7835

act gtt att ttt tta aac ggg gtc ctg gcg gct ggg aac ttt cca   97503
Thr Val Ile Phe Leu Asn Gly Val Leu Ala Ala Gly Asn Phe Pro
7840   7845   7850

tgt aaa aaa tca tgt aaa ggt gta aaa aac aac cga tca ctt ggc   97548
Cys Lys Lys Ser Cys Lys Gly Val Lys Asn Asn Arg Ser Leu Gly
7855   7860   7865

att ggc ata caa ggg tta cat aca act tgt ctc cgc tta gga ttt   97593
Ile Gly Ile Gln Gly Leu His Thr Thr Cys Leu Arg Leu Gly Phe
7870   7875   7880

gat tta act tcc caa cca gct aga cgg tta aat gta caa ata gcg   97638
Asp Leu Thr Ser Gln Pro Ala Arg Arg Leu Asn Val Gln Ile Ala
7885   7890   7895

gag tta atg ttg tat gag aca atg aaa aca agc atg gaa atg tgt   97683
Glu Leu Met Leu Tyr Glu Thr Met Lys Thr Ser Met Glu Met Cys
7900   7905   7910

aag att ggc ggc tta gcc ccg ttt aag ggt ttt acc gaa agt aaa   97728
Lys Ile Gly Gly Leu Ala Pro Phe Lys Gly Phe Thr Glu Ser Lys
7915   7920   7925

tat gct aag gga tgg tta cac caa gat ggg ttt tct acg ata agt   97773

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Tyr Ala Lys  Gly Trp Leu His Gln  Asp Gly Phe Ser Thr  Ile Ser
    7930              7935                   7940

tat tta gat  tta cca tgg tgt acc  ctg cga gat gat att  tgc gct      97818
Tyr Leu Asp  Leu Pro Trp Cys Thr  Leu Arg Asp Asp Ile  Cys Ala
    7945              7950                   7955

tat ggg tta  tac aac tcg cag ttc  tta gcg tta atg ccc  aca gtt      97863
Tyr Gly Leu  Tyr Asn Ser Gln Phe  Leu Ala Leu Met Pro  Thr Val
    7960              7965                   7970

tca tct gca  cag gta acg gag tgc  agt gag ggt ttc tct  cca att      97908
Ser Ser Ala  Gln Val Thr Glu Cys  Ser Glu Gly Phe Ser  Pro Ile
    7975              7980                   7985

tat aat aat  atg ttt agt aag gtc  acc acc tcg ggt gag  tta ctt      97953
Tyr Asn Asn  Met Phe Ser Lys Val  Thr Thr Ser Gly Glu  Leu Leu
    7990              7995                   8000

aga ccc aac  tta gac ctt atg gac  gaa cta aga gat atg  tat tca      97998
Arg Pro Asn  Leu Asp Leu Met Asp  Glu Leu Arg Asp Met  Tyr Ser
    8005              8010                   8015

tgt gaa gaa  aaa cga ctg gaa gtt  ata aac ata ctt gag  aaa aac      98043
Cys Glu Glu  Lys Arg Leu Glu Val  Ile Asn Ile Leu Glu  Lys Asn
    8020              8025                   8030

caa tgg tca  gta ata cgt tcg ttt  ggc tgt tta tct aat  agt cac      98088
Gln Trp Ser  Val Ile Arg Ser Phe  Gly Cys Leu Ser Asn  Ser His
    8035              8040                   8045

cca ctc tta  aaa tat aaa aca gcg  ttt gaa tat gag caa  gag gat      98133
Pro Leu Leu  Lys Tyr Lys Thr Ala  Phe Glu Tyr Glu Gln  Glu Asp
    8050              8055                   8060

ctc gtt gat  atg tgt gca gaa agg  gcg cca ttt att gac  caa agt      98178
Leu Val Asp  Met Cys Ala Glu Arg  Ala Pro Phe Ile Asp  Gln Ser
    8065              8070                   8075

caa tca atg  act tta ttt att gag  gaa cgc cca gac ggg  aca att      98223
Gln Ser Met  Thr Leu Phe Ile Glu  Glu Arg Pro Asp Gly  Thr Ile
    8080              8085                   8090

ccc gcc tcc  aaa ata atg aat ttg  ctt ata cgt gcc tat  aaa gcc      98268
Pro Ala Ser  Lys Ile Met Asn Leu  Leu Ile Arg Ala Tyr  Lys Ala
    8095              8100                   8105

ggc ctt aaa  acg ggt atg tac tac  tgt aaa att cgt aaa  gct acg      98313
Gly Leu Lys  Thr Gly Met Tyr Tyr  Cys Lys Ile Arg Lys  Ala Thr
    8110              8115                   8120

aac agc gga  ctg ttt gcg gga ggc  gaa tta acc tgt acc  agt tgt      98358
Asn Ser Gly  Leu Phe Ala Gly Gly  Glu Leu Thr Cys Thr  Ser Cys
    8125              8130                   8135

gct tta taa atttacacgg gaaactattc caaa atg  gat cag aaa gat tgc  98409
Ala Leu                                  Met  Asp Gln Lys Asp Cys
                                             8140                8145

agt cat ttt ttt tac  agg ccg gag tgt cca  gat ata aac aat tta      98454
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Ser His Phe Phe Tyr   Arg Pro Glu Cys Pro   Asp Ile Asn Asn Leu
            8150                    8155                    8160

cgt gcc ctg agc att   tcg aat cgt tgg tta   gaa agc gat ttt atc        98499
Arg Ala Leu Ser Ile   Ser Asn Arg Trp Leu   Glu Ser Asp Phe Ile
            8165                    8170                    8175

att gaa gat gat tat   caa tac ttg gac tgt   tta acg gaa gat gaa        98544
Ile Glu Asp Asp Tyr   Gln Tyr Leu Asp Cys   Leu Thr Glu Asp Glu
            8180                    8185                    8190

cta ata ttc tac aga   ttt att ttt aca ttt   tta tcg gcg gca gat        98589
Leu Ile Phe Tyr Arg   Phe Ile Phe Thr Phe   Leu Ser Ala Ala Asp
            8195                    8200                    8205

gat ctg gta aat gtt   aat ttg ggc tct cta   acc caa ctc ttt tcc        98634
Asp Leu Val Asn Val   Asn Leu Gly Ser Leu   Thr Gln Leu Phe Ser
            8210                    8215                    8220

caa aag gat att cac   cat tac tac att gaa   caa gag tgc atc gag        98679
Gln Lys Asp Ile His   His Tyr Tyr Ile Glu   Gln Glu Cys Ile Glu
            8225                    8230                    8235

gtt gtc cac gcg cgt   gtc tat agt caa att   caa cta atg ttg ttc        98724
Val Val His Ala Arg   Val Tyr Ser Gln Ile   Gln Leu Met Leu Phe
            8240                    8245                    8250

aga ggg gat gaa tcg   ttg cgg gta caa tac   gta aat gtc act att        98769
Arg Gly Asp Glu Ser   Leu Arg Val Gln Tyr   Val Asn Val Thr Ile
            8255                    8260                    8265

aat aat ccg tcg atc   caa caa aaa gta caa   tgg ttg gaa gaa aag        98814
Asn Asn Pro Ser Ile   Gln Gln Lys Val Gln   Trp Leu Glu Glu Lys
            8270                    8275                    8280

gta cgg gac aac cca   tcc gtt gca gaa aaa   tat ata cta atg att        98859
Val Arg Asp Asn Pro   Ser Val Ala Glu Lys   Tyr Ile Leu Met Ile
            8285                    8290                    8295

ctt ata gag ggc att   ttt ttt gta tca tcg   ttc gcg gct att gca        98904
Leu Ile Glu Gly Ile   Phe Phe Val Ser Ser   Phe Ala Ala Ile Ala
            8300                    8305                    8310

tat tta cgc aat aac   gga cta ttt gtt gta   act tgt caa ttt aac        98949
Tyr Leu Arg Asn Asn   Gly Leu Phe Val Val   Thr Cys Gln Phe Asn
            8315                    8320                    8325

gac ctt ata agc cga   gat gaa gcc ata cat   acc agc gca tcg tgt        98994
Asp Leu Ile Ser Arg   Asp Glu Ala Ile His   Thr Ser Ala Ser Cys
            8330                    8335                    8340

tgt ata tac aat aac   tat gta ccc gaa aaa   ccc gct atc acc aga        99039
Cys Ile Tyr Asn Asn   Tyr Val Pro Glu Lys   Pro Ala Ile Thr Arg
            8345                    8350                    8355

ata cat caa ctg ttt   tcg gaa gcc gtt gaa   atc gag tgt gcg ttt        99084
Ile His Gln Leu Phe   Ser Glu Ala Val Glu   Ile Glu Cys Ala Phe
            8360                    8365                    8370

tta aaa tcc cat gca   ccc aaa acc cgt ttg   gtg aac gtc gat gca        99129
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Leu Lys Ser His Ala  Pro Lys Thr Arg Leu  Val Asn Val Asp Ala
           8375                  8380                 8385

att aca caa tac gtg  aaa ttc agc gcg gac  agg ctt tta tca gcg    99174
Ile Thr Gln Tyr Val  Lys Phe Ser Ala Asp  Arg Leu Leu Ser Ala
           8390                  8395                 8400

att aat gta cca aaa  cta ttt aac acc cca  cct ccc gat tcg gac    99219
Ile Asn Val Pro Lys  Leu Phe Asn Thr Pro  Pro Pro Asp Ser Asp
           8405                  8410                 8415

ttt cca ctt gca ttt  atg att gca gat aaa  aac aca aat ttt ttt    99264
Phe Pro Leu Ala Phe  Met Ile Ala Asp Lys  Asn Thr Asn Phe Phe
           8420                  8425                 8430

gag aga cac agt aca  tct tat gcg ggc aca  gtg ata aac gat tta    99309
Glu Arg His Ser Thr  Ser Tyr Ala Gly Thr  Val Ile Asn Asp Leu
           8435                  8440                 8445

taa catgtatata cgagcaaaat aaaacaatga accattaagt cgctcttatg       99362

tgtgttttaa ttccaatatt ttgttaatac agtgtttagt gggagtggag taggaataaa  99422

ctgtttaaaa atacgtgcgt attggcgagc cattttttcc ccctttaagt tatgatataa  99482

ggtgttaata accatatatg ggtctgccgt attttgcata atatttacac gtttcattaa  99542

ctttaggcga ccgcgggtca atggagttac cacggcgatt atatgttcaa caaatgcgcg  99602

ttccaaatta tccaatgggg aggatgaggg tggcagaagg tttaaagccc aactggcgtc  99662

tactgtcacc tccgatcggt tagatgcata tttggaaacg gacactccgt tttctgtttt  99722

acccgacgtg gctacggtaa gacttttgaa aacctcgcca tgtctccacg agtcgtaagt  99782

gggggagcgc gttgaagtgt ccatttgatg tggaactttc aggccggtat cctgaataac  99842

ttgctgaaca gattttaggt tgtcacttgt atgcaaatcg gtctgacagc gaacaaaggc  99902

aaccaaaaat tcagggtatg taattcctaa atattgaagc aaatcgcgac atcgtactac  99962

tggagcaaac ataggaattg catctaacaa aatatcacag cccatgaaga gtaaatcagt  100022

atctgtcgta taaccaaag ccactgtacg cgtatgaaat aagtttgcac atgcctcgtc  100082

cgcctcaatg tcaaccgcct cgacgtatgc ataccccatc catctaataa gacttgcaca  100142

caatttgtga tataatcgat ggttaggatg tcctcgggat ggcattgtag aggtaagact  100202

gcatacgttt tggtcgcgca ggcagatcgt cttgtcagtt tgtcgtggac aaccgtccaa  100262

aaacatatcc tgggatttgt tttcttcgct aggaatacaa ctcgtggaag agtttcgaaa  100322

cacactgtca tatgtttccg atgttttgtt atacttgata gaacatgatg tgttggatga  100382

tagtagaaca cgggttaagt ccgaggttcc cctttcatcg tggttcatgg cccgtgacat  100442

aattgccttg gctccacgtg ataatgggcc gtctgtacaa cgttccaata caaatatcgg  100502

atagtatgac cgttgtgtta atagccgcaa taagactcca agacaatgta tcgttacaga  100562
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tggtccgtgt aaattctcgc gtttacccac agggtataaa cgttccaaca atgtgtacat 100622

gacgttccat acgtctaccg ccacgggggt taaaactccg ggtggcgttg aaatgatgct 100682

gggtttaacc agtttatgtt catggataaa gcgtgtcagt ccaaagagcc ccatcaatac 100742

acttaaccaa gtttatatcg tcttgtgaaa ggtttcacag cggcttcagt aattcttcga 100802

tgtgatcttg tgttaattac agacgtatat aatgatgtac atatttttta tgacaaacat 100862

tacatcaaat ctggtaactt cttacgtatt ttattgcaca gtccctatta aggaacaccc 100922

cctgtattgg aacacgtgga aatgttccct cccatgggcc gtactattca aatatcatgc 100982

ctgtttatgt acttaagtca ccggatcggg ttaaacaaac atattaacga aactcgtgtg 101042

tttacatatg attacttttt ctatagtaaa cattttaagt agtaaatt atg gat ttg 101099
                                                      Met Asp Leu

agg tcg cgt aca gac gat gct ttg gac atg gaa ttg cat gcg ggt 101144
Arg Ser Arg Thr Asp Asp Ala Leu Asp Met Glu Leu His Ala Gly
    8450   8455   8460

ttt gac gcc cca gaa atc gcc aga gct gtt tta acg gaa aaa acg 101189
Phe Asp Ala Pro Glu Ile Ala Arg Ala Val Leu Thr Glu Lys Thr
    8465   8470   8475

ctt act ggt tta att tcg tct ata tca cct ctg gtt aat aga cta 101234
Leu Thr Gly Leu Ile Ser Ser Ile Ser Pro Leu Val Asn Arg Leu
    8480   8485   8490

agg gat tct att tta ata ttc agc gac gaa gga tta att att cac 101279
Arg Asp Ser Ile Leu Ile Phe Ser Asp Glu Gly Leu Ile Ile His
    8495   8500   8505

tgt agt ttg gaa aca gaa caa ctg tat att cct ata ccg gca aat 101324
Cys Ser Leu Glu Thr Glu Gln Leu Tyr Ile Pro Ile Pro Ala Asn
    8510   8515   8520

atg ttt gac cag tat aat tgg act ggg ccg aga atg gtt gta ctc 101369
Met Phe Asp Gln Tyr Asn Trp Thr Gly Pro Arg Met Val Val Leu
    8525   8530   8535

gcg gca acg gag gga cgg tcc tcg ctt att gac gcg ttt cgc cat 101414
Ala Ala Thr Glu Gly Arg Ser Ser Leu Ile Asp Ala Phe Arg His
    8540   8545   8550

aca aaa gat ccg tcg acc cca aca cgg tta tat ttt aaa ttt acc 101459
Thr Lys Asp Pro Ser Thr Pro Thr Arg Leu Tyr Phe Lys Phe Thr
    8555   8560   8565

gga caa ccc ccc gag cgg agt att atc caa acg atg gta tgg caa 101504
Gly Gln Pro Pro Glu Arg Ser Ile Ile Gln Thr Met Val Trp Gln
    8570   8575   8580

cgc ccg ggt gat tgt ggt cca gat gat caa gta caa tgt tac aaa 101549
Arg Pro Gly Asp Cys Gly Pro Asp Asp Gln Val Gln Cys Tyr Lys
    8585   8590   8595

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caa gtt gta aaa cgt gaa ctc  gct tgt tat aca atg  atg ttt cca       101594
Gln Val Val Lys Arg Glu Leu  Ala Cys Tyr Thr Met  Met Phe Pro
    8600             8605              8610

aat cta act cca gat ata agc  att tgc tta aaa cgc  gat caa ttc       101639
Asn Leu Thr Pro Asp Ile Ser  Ile Cys Leu Lys Arg  Asp Gln Phe
    8615             8620              8625

acc cgt tta cag cga cta ctt  aaa act ttt ggg ttt  aca aca tgc       101684
Thr Arg Leu Gln Arg Leu Leu  Lys Thr Phe Gly Phe  Thr Thr Cys
    8630             8635              8640

ttc att cta aca gcc acg gat  atg tac atc cag acc  gcc ggg ggt       101729
Phe Ile Leu Thr Ala Thr Asp  Met Tyr Ile Gln Thr  Ala Gly Gly
    8645             8650              8655

ggt ttt atc tca ttt aat gtt  tcc ttg gat ata aac  gga agc aag       101774
Gly Phe Ile Ser Phe Asn Val  Ser Leu Asp Ile Asn  Gly Ser Lys
    8660             8665              8670

cct aca cca tat aat tta ata  cgc tca atc aca aat  tca aaa agg       101819
Pro Thr Pro Tyr Asn Leu Ile  Arg Ser Ile Thr Asn  Ser Lys Arg
    8675             8680              8685

atc ctt aat aat gtt gtt tat  ggc agc ggg agt atg  cgt gaa ttt       101864
Ile Leu Asn Asn Val Val Tyr  Gly Ser Gly Ser Met  Arg Glu Phe
    8690             8695              8700

gga gta tta ttg gaa aca cac  agt gga ttc cgt tct  gcc gta caa       101909
Gly Val Leu Leu Glu Thr His  Ser Gly Phe Arg Ser  Ala Val Gln
    8705             8710              8715

aat ctt aag tta aca cgg gat  gag acg tgt tat att  aat ttt tat       101954
Asn Leu Lys Leu Thr Arg Asp  Glu Thr Cys Tyr Ile  Asn Phe Tyr
    8720             8725              8730

ctc gcc tta act aac tcc ccc  atg gtt gga ttg tat  atc caa cgt       101999
Leu Ala Leu Thr Asn Ser Pro  Met Val Gly Leu Tyr  Ile Gln Arg
    8735             8740              8745

tcc gca ccc gtg cat tct ttt  ttt tat gca acg ttc  tta agt ccc       102044
Ser Ala Pro Val His Ser Phe  Phe Tyr Ala Thr Phe  Leu Ser Pro
    8750             8755              8760

aaa gac ctt aaa gaa aaa tta  acc tcg atg caa tta  ttt gcg aac       102089
Lys Asp Leu Lys Glu Lys Leu  Thr Ser Met Gln Leu  Phe Ala Asn
    8765             8770              8775

atg gaa tct gtg aag gat gaa  cca cca tta aaa aaa  aga cgc aat       102134
Met Glu Ser Val Lys Asp Glu  Pro Pro Leu Lys Lys  Arg Arg Asn
    8780             8785              8790

tta tta aca aaa aga aac gaa  aaa aat acc gga aat  aaa atg ggg       102179
Leu Leu Thr Lys Arg Asn Glu  Lys Asn Thr Gly Asn  Lys Met Gly
    8795             8800              8805

ggg aaa ctc ccc gaa acc aca  tgg cag gag gga atc  gga att cgc       102224
Gly Lys Leu Pro Glu Thr Thr  Trp Gln Glu Gly Ile  Gly Ile Arg
    8810             8815              8820
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gaa tat  tgt gtg gct cct cca  gtg gac cct gca gga  acc ctg gat          102269
Glu Tyr  Cys Val Ala Pro Pro  Val Asp Pro Ala Gly  Thr Leu Asp
    8825                   8830               8835

tat tct  gaa tta tca cgt gaa  tct gac gta ata tgt  aca gtt aaa          102314
Tyr Ser  Glu Leu Ser Arg Glu  Ser Asp Val Ile Cys  Thr Val Lys
    8840                   8845               8850

taa gtgcaacttt tgcttatatt ttacatacaa acttgtgtgt accatagatg             102367

aacacatttt tatttgtttt gaattattaa acttaagac atg gcc  gtg aat ggt        102421
                                             Met Ala  Val Asn Gly
                                                 8855

gaa aga  gct gtc cat gat gaa  aac ctg ggt gtg tta  gac aga gaa         102466
Glu Arg  Ala Val His Asp Glu  Asn Leu Gly Val Leu  Asp Arg Glu
    8860                   8865               8870

tta atc  cgc gct caa tca atc  caa gga tgt gtc gga  aac cct caa         102511
Leu Ile  Arg Ala Gln Ser Ile  Gln Gly Cys Val Gly  Asn Pro Gln
    8875                   8880               8885

gaa tgt  aat tcg tgt gca ata  acc tca gca tcg cgg  ttg ttt ctc         102556
Glu Cys  Asn Ser Cys Ala Ile  Thr Ser Ala Ser Arg  Leu Phe Leu
    8890                   8895               8900

gtg gga  cta caa gca agc gtt  atc acg tcc ggg tta  att tta caa         102601
Val Gly  Leu Gln Ala Ser Val  Ile Thr Ser Gly Leu  Ile Leu Gln
    8905                   8910               8915

tat cac  gtc tgc gaa gct gcc  gtc aat gca act att  atg ggg ttg         102646
Tyr His  Val Cys Glu Ala Ala  Val Asn Ala Thr Ile  Met Gly Leu
    8920                   8925               8930

atc gtc  gtt tcg ggg tta tgg  cca aca tcc gtg aaa  ttt cta cgc         102691
Ile Val  Val Ser Gly Leu Trp  Pro Thr Ser Val Lys  Phe Leu Arg
    8935                   8940               8945

aca tta  gca aaa ttg gga cga  tgt ttg cag acg gtg  gtc gtg ttg         102736
Thr Leu  Ala Lys Leu Gly Arg  Cys Leu Gln Thr Val  Val Val Leu
    8950                   8955               8960

ggt ttt  gct gtg tta tgg gcg  gtt ggt tgc cca ata  tcc cgg gat         102781
Gly Phe  Ala Val Leu Trp Ala  Val Gly Cys Pro Ile  Ser Arg Asp
    8965                   8970               8975

ctt cca  ttt gta gaa tta ctg  gga att tcc ata tcc  gcg att acc         102826
Leu Pro  Phe Val Glu Leu Leu  Gly Ile Ser Ile Ser  Ala Ile Thr
    8980                   8985               8990

gga aca  gtg gct gct gtg cat  atc cat tac tac aac  ttt gtt acg         102871
Gly Thr  Val Ala Ala Val His  Ile His Tyr Tyr Asn  Phe Val Thr
    8995                   9000               9005

aca ttc  aat gga ccg cat att  tat ttt tat gtt atg  atg ttg gga         102916
Thr Phe  Asn Gly Pro His Ile  Tyr Phe Tyr Val Met  Met Leu Gly
    9010                   9015               9020

act ggg  ttg gga ggt tta cta  acc gtt att tta tat  atg tat gtc         102961
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Thr Gly  Leu Gly Gly Leu Leu  Thr Val Ile Leu Tyr  Met Tyr Val
    9025                   9030                  9035

agt aaa  tat gag gtt ctt att  gga ttg tgt ata tct  att gtc aca      103006
Ser Lys  Tyr Glu Val Leu Ile  Gly Leu Cys Ile Ser  Ile Val Thr
    9040                   9045                  9050

cta gtt  tca att gtc gat gcc  gcc acc gat ttg caa  gat acg tgt      103051
Leu Val  Ser Ile Val Asp Ala  Ala Thr Asp Leu Gln  Asp Thr Cys
    9055                   9060                  9065

ata tat  cgt aaa aat cgc cat  aag caa tta aac act  tat aca gat      103096
Ile Tyr  Arg Lys Asn Arg His  Lys Gln Leu Asn Thr  Tyr Thr Asp
    9070                   9075                  9080

tta ggt  ttt gcc gtt gta tat  aca caa aat gac cgc  ggg aga gta      103141
Leu Gly  Phe Ala Val Val Tyr  Thr Gln Asn Asp Arg  Gly Arg Val
    9085                   9090                  9095

tgt gac  cat cga gaa agt tcc  cgg acc ctt aaa cgc  gtg ttt aaa      103186
Cys Asp  His Arg Glu Ser Ser  Arg Thr Leu Lys Arg  Val Phe Lys
    9100                   9105                  9110

gga att  cgt ata atg tct gtt  ata ccc ccg gtg tta  tat ata gtt      103231
Gly Ile  Arg Ile Met Ser Val  Ile Pro Pro Val Leu  Tyr Ile Val
    9115                   9120                  9125

acc cca  tta atg tgg gca atc  tca cat ata att aaa  tta aat cat      103276
Thr Pro  Leu Met Trp Ala Ile  Ser His Ile Ile Lys  Leu Asn His
    9130                   9135                  9140

ttt atc  aaa ctt aca caa gta  acg tta gca gtt tca  ata gga ggt      103321
Phe Ile  Lys Leu Thr Gln Val  Thr Leu Ala Val Ser  Ile Gly Gly
    9145                   9150                  9155

cat att  ata gca ttt ggg tta  cag ggt ttt gcc gtt  tta tat caa      103366
His Ile  Ile Ala Phe Gly Leu  Gln Gly Phe Ala Val  Leu Tyr Gln
    9160                   9165                  9170

gaa aaa  aaa aac cta tgg gta  att gta tta tat aca  acg acc tcg      103411
Glu Lys  Lys Asn Leu Trp Val  Ile Val Leu Tyr Thr  Thr Thr Ser
    9175                   9180                  9185

gtg acg  ggt ata gct gta aca  ttt gcc ggc att tca  tgg gga gct      103456
Val Thr  Gly Ile Ala Val Thr  Phe Ala Gly Ile Ser  Trp Gly Ala
    9190                   9195                  9200

att ata  att cta aca tca aca  gtt gcg gcg ggt ttg  acg tgt att      103501
Ile Ile  Ile Leu Thr Ser Thr  Val Ala Ala Gly Leu  Thr Cys Ile
    9205                   9210                  9215

cag atg  atg aga cta agc gtt  aaa cct att gac tgt  ttt atg gca      103546
Gln Met  Met Arg Leu Ser Val  Lys Pro Ile Asp Cys  Phe Met Ala
    9220                   9225                  9230

tct cat  atc act aaa gta tat  cac gtg tgt gtt tat  att ata ata      103591
Ser His  Ile Thr Lys Val Tyr  His Val Cys Val Tyr  Ile Ile Ile
    9235                   9240                  9245

aat cta  tgc tat cta tgt ggt  aca tat gta tcg taa tcgagataaa      103637
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Asn Leu  Cys Tyr Leu Cys Gly  Thr Tyr Val Ser
   9250                 9255


taaagttttt aaagttgcaa aagccgtttt tattattccc aatgtcgaaa aaaacgtttc 103697

catcatttaa attccgcggt gggtgtttta atcttttatt taagggagc gtggatgtgt 103757

caataaaaac cagg atg   aag cgg ata caa ata  aat tta att tta acg    103804
                Met   Lys Arg Ile Gln Ile  Asn Leu Ile Leu Thr
                9260               9265                  9270

atc gcg tgt ata caa   tta tcg act gaa tct  caa ccc aca ccc gta    103849
Ile Ala Cys Ile Gln   Leu Ser Thr Glu Ser  Gln Pro Thr Pro Val
             9275                  9280                  9285

agt ata act gaa tta   tat acc tcg gcc gct  acc cga aag ccc gat    103894
Ser Ile Thr Glu Leu   Tyr Thr Ser Ala Ala  Thr Arg Lys Pro Asp
             9290                  9295                  9300

ccc gcc gtc gcg ccc   acc tcg gcc gct tcc  cga aag ccc gat ccc    103939
Pro Ala Val Ala Pro   Thr Ser Ala Ala Ser  Arg Lys Pro Asp Pro
             9305                  9310                  9315

gcc gtc gcg ccc acc   tcg gcc gct tcc cga  aag ccc gat ccc gcc    103984
Ala Val Ala Pro Thr   Ser Ala Ala Ser Arg  Lys Pro Asp Pro Ala
             9320                  9325                  9330

gtc gcg ccc acc tcg   gcc gct tcc cga aag  ccc gat ccc gcc gtc    104029
Val Ala Pro Thr Ser   Ala Ala Ser Arg Lys  Pro Asp Pro Ala Val
             9335                  9340                  9345

gcg ccc acc tcg gcc   gct acc cga aag ccc  gat ccc gcc gtc gcg    104074
Ala Pro Thr Ser Ala   Ala Thr Arg Lys Pro  Asp Pro Ala Val Ala
             9350                  9355                  9360

ccc acc tcg gcc gct   tcc cga aag ccc gat  ccc gcc gtc gcg ccc    104119
Pro Thr Ser Ala Ala   Ser Arg Lys Pro Asp  Pro Ala Val Ala Pro
             9365                  9370                  9375

acc tcg gcc gct acc   cga aag ccc gat ccc  gcc gtc gcg ccc acc    104164
Thr Ser Ala Ala Thr   Arg Lys Pro Asp Pro  Ala Val Ala Pro Thr
             9380                  9385                  9390

tcg gcc gct tcc cga   aag ccc gat ccc gca  gcc aac acc caa cat    104209
Ser Ala Ala Ser Arg   Lys Pro Asp Pro Ala  Ala Asn Thr Gln His
             9395                  9400                  9405

tca caa cca cct ttt   cta tat gaa aat ata  caa tgc gtt cac ggc    104254
Ser Gln Pro Pro Phe   Leu Tyr Glu Asn Ile  Gln Cys Val His Gly
             9410                  9415                  9420

gga ata caa tcc ata   ccc tat ttt cac aca  ttt atc atg cct tgt    104299
Gly Ile Gln Ser Ile   Pro Tyr Phe His Thr  Phe Ile Met Pro Cys
             9425                  9430                  9435

tac atg cgt cta acg   acc gga caa cag gcg  gcc ttt aag cag caa    104344
Tyr Met Arg Leu Thr   Thr Gly Gln Gln Ala  Ala Phe Lys Gln Gln
             9440                  9445                  9450

caa aaa aca tat gaa   caa tat tct tta gat  ccg gaa ggt tca aat    104389
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      Gln Lys Thr Tyr Glu   Gln Tyr Ser Leu Asp   Pro Glu Gly Ser Asn
                  9455                     9460                     9465

ata aca agg tgg aag   tcg ctt ata cgc ccc   gat ctt cat att gaa        104434
Ile Thr Arg Trp Lys   Ser Leu Ile Arg Pro   Asp Leu His Ile Glu
                9470                     9475                     9480

gtt tgg ttt acg cgt   cac ctt ata gat ccg   cac cgt caa ctg ggc        104479
Val Trp Phe Thr Arg   His Leu Ile Asp Pro   His Arg Gln Leu Gly
                9485                     9490                     9495

aat gcg tta ata cgc   atg cca gat tta ccg   gtt atg tta tat agc        104524
Asn Ala Leu Ile Arg   Met Pro Asp Leu Pro   Val Met Leu Tyr Ser
                9500                     9505                     9510

aac agt gcc gat tta   aac tta ata aac aac   cct gag ata ttt aca        104569
Asn Ser Ala Asp Leu   Asn Leu Ile Asn Asn   Pro Glu Ile Phe Thr
                9515                     9520                     9525

cac gct aag gaa aat   tat gta ata cca gat   gtt aaa aca acg tct        104614
His Ala Lys Glu Asn   Tyr Val Ile Pro Asp   Val Lys Thr Thr Ser
                9530                     9535                     9540

gat ttt tct gta aca   att tta tct atg gat   gct acc acg gag gga        104659
Asp Phe Ser Val Thr   Ile Leu Ser Met Asp   Ala Thr Thr Glu Gly
                9545                     9550                     9555

acg tat att tgg cga   gtc gtt aat aca aaa   act aag aac gtc ata        104704
Thr Tyr Ile Trp Arg   Val Val Asn Thr Lys   Thr Lys Asn Val Ile
                9560                     9565                     9570

tcg gaa cac agt att   aca gtt aca acg tat   tat cgt cca aat att        104749
Ser Glu His Ser Ile   Thr Val Thr Thr Tyr   Tyr Arg Pro Asn Ile
                9575                     9580                     9585

acc gtt gtc ggc gat   cca gtc tta acc gga   cag aca tac gca gcc        104794
Thr Val Val Gly Asp   Pro Val Leu Thr Gly   Gln Thr Tyr Ala Ala
                9590                     9595                     9600

tac tgt aac gta tca   aag tat tat cca ccg   cac tcg gta cgt gtt        104839
Tyr Cys Asn Val Ser   Lys Tyr Tyr Pro Pro   His Ser Val Arg Val
                9605                     9610                     9615

cgg tgg act tca agg   ttt ggt aac atc gga   aaa aat ttt ata acc        104884
Arg Trp Thr Ser Arg   Phe Gly Asn Ile Gly   Lys Asn Phe Ile Thr
                9620                     9625                     9630

gat gca ata caa gaa   tat gcc aat gga tta   ttt agt tat gtt tcg        104929
Asp Ala Ile Gln Glu   Tyr Ala Asn Gly Leu   Phe Ser Tyr Val Ser
                9635                     9640                     9645

gcg gta cga att cca   cag caa aaa caa atg   gat tac cca ccc cca        104974
Ala Val Arg Ile Pro   Gln Gln Lys Gln Met   Asp Tyr Pro Pro Pro
                9650                     9655                     9660

gcc atc caa tgt aat   gtt tta tgg att cgg   gat ggc gtc tct aat        105019
Ala Ile Gln Cys Asn   Val Leu Trp Ile Arg   Asp Gly Val Ser Asn
                9665                     9670                     9675

atg aaa tat tct gct   gtc gtt acc cct gac   gtc tat cca ttt ccc        105064
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Met Lys Tyr Ser Ala   Val Val Thr Pro Asp   Val Tyr Pro Phe Pro
              9680                      9685                      9690

aac gtg tct ata ggt   att att gat gga cac   ata gta tgt acg gca        105109
Asn Val Ser Ile Gly   Ile Ile Asp Gly His   Ile Val Cys Thr Ala
              9695                      9700                      9705

aaa tgt gtg cca cgt   ggc gtt gta cat ttc   gta tgg tgg gtt aac        105154
Lys Cys Val Pro Arg   Gly Val Val His Phe   Val Trp Trp Val Asn
              9710                      9715                      9720

gat tct ccc att aac   cac gaa aac agt gag   att act ggg gtg tgt        105199
Asp Ser Pro Ile Asn   His Glu Asn Ser Glu   Ile Thr Gly Val Cys
              9725                      9730                      9735

gat caa aac aaa cgg   ttt gta aac atg caa   agt tct tgt cca aca        105244
Asp Gln Asn Lys Arg   Phe Val Asn Met Gln   Ser Ser Cys Pro Thr
              9740                      9745                      9750

tcg gaa ctc gac gga   cct atc acc tat tcg   tgt cat cta gat ggt        105289
Ser Glu Leu Asp Gly   Pro Ile Thr Tyr Ser   Cys His Leu Asp Gly
              9755                      9760                      9765

tac cct aaa aaa ttc   cct ccg ttt tcg gcc   gtt tat acc tac gat        105334
Tyr Pro Lys Lys Phe   Pro Pro Phe Ser Ala   Val Tyr Thr Tyr Asp
              9770                      9775                      9780

gca tct acc tac gcc   act aca ttt tcc gtt   gta gca gtt ata att        105379
Ala Ser Thr Tyr Ala   Thr Thr Phe Ser Val   Val Ala Val Ile Ile
              9785                      9790                      9795

ggt gtg ata tct atc   ctt ggg aca ttg ggt   ctt atc gca gtt atc        105424
Gly Val Ile Ser Ile   Leu Gly Thr Leu Gly   Leu Ile Ala Val Ile
              9800                      9805                      9810

gca acc cta tgc atc   cgt tgc tgt tca taa acagaaacca accaaacgcg        105474
Ala Thr Leu Cys Ile   Arg Cys Cys Ser
              9815

tctgtgtata tcattttatt acattcgcaa cacatctact gtcttgacaa catttaaaaa 105534

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Val Ile   Asp Pro Ile Leu Glu   Thr Ala Val Asn Thr   Gly Asp Met
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Phe Cys   Ser Gln Thr Ile Pro   Asn Arg Cys Leu Lys   Asp Thr Ile
    9840                   9845                   9850

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Leu Ile   Glu Val Gln Pro Glu   Cys Ala Asp Thr Leu   Gln Cys Val
    9855                   9860                   9865

tta gac   gat aaa gta agt cga   cat caa ccg ttg tta   ctc cgg aac   114409
Leu Asp   Asp Lys Val Ser Arg   His Gln Pro Leu Leu   Leu Arg Asn
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cac aag   aaa ctc gaa ctg cca   tct gaa aaa tct gta   aca cgg ggc   114454
His Lys   Lys Leu Glu Leu Pro   Ser Glu Lys Ser Val   Thr Arg Gly
    9885                   9890                   9895

ggt ttt   tat atg cag cag ttg   gag ctg ttg gtt aag   tcg gcg cct   114499
Gly Phe   Tyr Met Gln Gln Leu   Glu Leu Leu Val Lys   Ser Ala Pro
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ccc aat   gaa tac gca ctg ttg   tta att caa tgc aaa   gat act gcc   114544
Pro Asn   Glu Tyr Ala Leu Leu   Leu Ile Gln Cys Lys   Asp Thr Ala
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gcg ggt   tac aga gga gta att   tca gcc ctt ttg tat   tac cgg cca         114634
Ala Gly   Tyr Arg Gly Val Ile   Ser Ala Leu Leu Tyr   Tyr Arg Pro
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gga gta   acc gtt att tta ccc   gga cat tta aca atc   tac ttg ttc         114679
Gly Val   Thr Val Ile Leu Pro   Gly His Leu Thr Ile   Tyr Leu Phe
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Pro Val   Lys Leu Arg Gln Ser   Arg Leu Leu Pro Lys   Asn Val Leu
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Lys His   Leu Asp Pro Ile Phe   Lys Ser Ile Gln Val   Gln Pro Leu
    9990                9995                10000

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Ser Asn   Ser Pro Ser Asn Tyr   Glu Lys Pro Val Ile   Pro Glu Phe
    10005               10010               10015

gct gat   att tcc acg gta cag   cag ggg caa cct tta   cat agg gat         114859
Ala Asp   Ile Ser Thr Val Gln   Gln Gly Gln Pro Leu   His Arg Asp
    10020               10025               10030

tct gca   gaa tac cat atc gat   gtt ccc tta acc tac   aaa cat atc         114904
Ser Ala   Glu Tyr His Ile Asp   Val Pro Leu Thr Tyr   Lys His Ile
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atc aat   cca aaa cgc caa gaa   gac gcg gga tat gat   att tgt gta         114949
Ile Asn   Pro Lys Arg Gln Glu   Asp Ala Gly Tyr Asp   Ile Cys Val
    10050               10055               10060

cca tat   aac cta tat tta aaa   agg aat gaa ttt ata   aaa att gtc         114994
Pro Tyr   Asn Leu Tyr Leu Lys   Arg Asn Glu Phe Ile   Lys Ile Val
    10065               10070               10075

tta ccg   att ata aga gac tgg   gac tta caa cat ccg   agt ata aac         115039
Leu Pro   Ile Ile Arg Asp Trp   Asp Leu Gln His Pro   Ser Ile Asn
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gct tat   att ttt gga aga tca   tcg aaa agc cga tca   ggc att atc         115084
Ala Tyr   Ile Phe Gly Arg Ser   Ser Lys Ser Arg Ser   Gly Ile Ile
    10095               10100               10105

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Val Cys   Pro Thr Ala Trp Pro   Ala Gly Glu His Cys   Lys Phe Tyr
    10110               10115               10120

gta tat   aat ctc acg ggt gat   gac ata cgt ata aaa   acg gga gat         115174
Val Tyr   Asn Leu Thr Gly Asp   Asp Ile Arg Ile Lys   Thr Gly Asp
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cgt ctt   gca cag gtc ctg tta   ata gat cac aac acc   caa ata cac         115219
Arg Leu   Ala Gln Val Leu Leu   Ile Asp His Asn Thr   Gln Ile His
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Arg Gly   Lys Cys Gly Ile Pro   Gly Val Gln Trp Tyr   Phe Thr Lys
    10170                 10175                 10180

acg tta   gat cta ata gcc aca   ccc agc gaa cgg gga   acg cgt gga 115354
Thr Leu   Asp Leu Ile Ala Thr   Pro Ser Glu Arg Gly   Thr Arg Gly
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Phe Gly   Ser Thr Asp Lys Glu   Thr Asn Asp Val Asp   Phe Leu Leu
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Lys His
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Leu Leu Phe Ala Thr   Lys Gly Cys Ala Ile   Ser His Ser Leu Leu
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Arg Glu Glu Ile Thr    Gln Val Ile Pro Thr    Lys Arg Pro Arg Glu
            10275               10280               10285

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Val Thr Glu Asn Asp    Glu Glu Asn Gln Ile    Met His Leu Phe Cys
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Ser Arg Asp Val Asn    Val Ile Phe Tyr Leu    Ile Gly Gly Phe Ser
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Thr Gly Asp Val Arg    Ser Arg Val Trp Pro    Ile Phe Phe Cys Cys
            10320               10325               10330

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Phe Lys Thr Gln Thr    Asp Phe Lys Ala Leu    Tyr Lys Ala Leu Trp
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Tyr Gly Ala Pro Leu    Asn Pro His Ile Ile    Ser Asp Thr Leu Cys
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Ile Ser Glu Thr Phe    Asp Ile His Ser Glu    Val Ile Gln Thr Leu
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Met Val Thr Thr His    His Leu Asn Arg Lys    Gly Leu Ser Asp Asn
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Gly Leu Cys Ile Thr    Glu Ala Thr Leu Cys    Lys Leu Val Lys Lys
            10395               10400               10405

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Ser Val Gly Arg Gln    Glu Leu Thr Ser Leu    Tyr Ala His Tyr Glu
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Arg Gln Val Leu Ala    Ala Tyr Arg Arg Leu    Tyr Trp Gly Tyr Gly
            10425               10430               10435

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Cys Ser Pro Phe Trp    Tyr Ile Val Arg Phe    Gly Pro Ser Glu Lys
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Thr Leu Val Leu Ala    Thr Arg Tyr Tyr Leu    Leu Gln Thr Asp Thr
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Ser Tyr Asn Thr Leu    Glu Thr Pro Leu Tyr    Asp Leu Gln Ala Ile
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Lys Asp Leu Phe Leu    Thr Tyr Gln Val Pro    Ala Leu Pro Asn Cys
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Ser Gly Tyr Asn Ile    Ser Asp Leu Leu Ser    Phe Asp Lys Leu Ser
            10500                  10505                  10510

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Met Phe Cys Cys Ser    Ser Thr Tyr Thr Arg    Gly Leu Thr Ala Lys
            10515                  10520                  10525

aat gct cta tcg tac    att tta cag cga ata    cat aca gac aca acg    117282
Asn Ala Leu Ser Tyr    Ile Leu Gln Arg Ile    His Thr Asp Thr Thr
            10530                  10535                  10540

gaa ata cac gca gta    tcg gag tat att acc    aac gat aga aaa ggc    117327
Glu Ile His Ala Val    Ser Glu Tyr Ile Thr    Asn Asp Arg Lys Gly
            10545                  10550                  10555

ctt aaa gtt cca gac    cgt gaa ttt gtt gat    tat att tat ctg gca    117372
Leu Lys Val Pro Asp    Arg Glu Phe Val Asp    Tyr Ile Tyr Leu Ala
            10560                  10565                  10570

cat ttt gaa tgt ttc    aat cgg aaa cag atc    gca gac cac cta caa    117417
His Phe Glu Cys Phe    Asn Arg Lys Gln Ile    Ala Asp His Leu Gln
            10575                  10580                  10585

gcg gtt aca tac tca    gat ttt gtg aat aaa    ccg gtc ctc tta aaa    117462
Ala Val Thr Tyr Ser    Asp Phe Val Asn Lys    Pro Val Leu Leu Lys
            10590                  10595                  10600

tca tcc aac ctg gga    aaa aga gct act gct    aat ttt ttt aat cat    117507
Ser Ser Asn Leu Gly    Lys Arg Ala Thr Ala    Asn Phe Phe Asn His
            10605                  10610                  10615

gta cgt tct cgt ctc    aac atg cgt gac tat    ata aaa aag aac gta    117552
Val Arg Ser Arg Leu    Asn Met Arg Asp Tyr    Ile Lys Lys Asn Val
            10620                  10625                  10630

att tgt gat gtc act    gaa ctt gga cct gag    att gga cat aaa tat    117597
Ile Cys Asp Val Thr    Glu Leu Gly Pro Glu    Ile Gly His Lys Tyr
            10635                  10640                  10645

aca att act aaa aca    tat act tta agt ctt    acg tat gcc gca aaa    117642
Thr Ile Thr Lys Thr    Tyr Thr Leu Ser Leu    Thr Tyr Ala Ala Lys
            10650                  10655                  10660

cct agc aag ttt ata    ggc gta tgt gac cta    gct aca acg cta act    117687
Pro Ser Lys Phe Ile    Gly Val Cys Asp Leu    Ala Thr Thr Leu Thr
            10665                  10670                  10675

cgt cgt gtg gaa aac    att gaa aaa caa ttt    agt cca tat gga tgg    117732
Arg Arg Val Glu Asn    Ile Glu Lys Gln Phe    Ser Pro Tyr Gly Trp
            10680                  10685                  10690

tcc tcc act att ccc    tca aat cca ccc ggt    ttt gac gaa ttg tct    117777
Ser Ser Thr Ile Pro    Ser Asn Pro Pro Gly    Phe Asp Glu Leu Ser
            10695                  10700                  10705
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aat ttt gag gat tcg   ggt gtt tcc gcg gag   gcg tta cga gca gcc   117822
Asn Phe Glu Asp Ser   Gly Val Ser Ala Glu   Ala Leu Arg Ala Ala
            10710                  10715                  10720

aac ttt gca aac gat   aca cct aac caa agt   ggt cgt act ggt ttt   117867
Asn Phe Ala Asn Asp   Thr Pro Asn Gln Ser   Gly Arg Thr Gly Phe
            10725                  10730                  10735

gat acg agc ccg ggg   att aca aaa cta tta   ctg ttt ttc tct gct   117912
Asp Thr Ser Pro Gly   Ile Thr Lys Leu Leu   Leu Phe Phe Ser Ala
            10740                  10745                  10750

gcc act ggg ata gcc   aca cat gat gta tcc   atc ctg agt tat aaa   117957
Ala Thr Gly Ile Ala   Thr His Asp Val Ser   Ile Leu Ser Tyr Lys
            10755                  10760                  10765

act cca tta gaa gcc   ctc atc ggc cat tct   gag gta act gga cca   118002
Thr Pro Leu Glu Ala   Leu Ile Gly His Ser   Glu Val Thr Gly Pro
            10770                  10775                  10780

atg cct gta tat cgg   gta gcc ttg cct cac   ggc gcc caa gca ttt   118047
Met Pro Val Tyr Arg   Val Ala Leu Pro His   Gly Ala Gln Ala Phe
            10785                  10790                  10795

gct gtt att gct aat   gat acg tgg tca tca   ata aca aac cgt tac   118092
Ala Val Ile Ala Asn   Asp Thr Trp Ser Ser   Ile Thr Asn Arg Tyr
            10800                  10805                  10810

act tta ccg cac gag   gct cga tta att gcg   gag gac ctt aaa caa   118137
Thr Leu Pro His Glu   Ala Arg Leu Ile Ala   Glu Asp Leu Lys Gln
            10815                  10820                  10825

att aat cca tgt aat   ttt gtt gcc gct tca   cta cga gat atg cag   118182
Ile Asn Pro Cys Asn   Phe Val Ala Ala Ser   Leu Arg Asp Met Gln
            10830                  10835                  10840

ttg act tta cta tta   tct acg tct gtt aaa   aac gtt tct aaa att   118227
Leu Thr Leu Leu Leu   Ser Thr Ser Val Lys   Asn Val Ser Lys Ile
            10845                  10850                  10855

tca tca aac ata ccc   aaa gat cag ctt tat   ata aac agg aat gag   118272
Ser Ser Asn Ile Pro   Lys Asp Gln Leu Tyr   Ile Asn Arg Asn Glu
            10860                  10865                  10870

cta ttt aat aca aat   ctt ata atc aca aac   ctc ata ctt gat gta   118317
Leu Phe Asn Thr Asn   Leu Ile Ile Thr Asn   Leu Ile Leu Asp Val
            10875                  10880                  10885

gac ttt cat ata aga   aaa ccc atc cca ttg   ggt att tta cat gcc   118362
Asp Phe His Ile Arg   Lys Pro Ile Pro Leu   Gly Ile Leu His Ala
            10890                  10895                  10900

ggc atg cga gca ttt   cgt cat ggt att tta   acg gcc atg caa tta   118407
Gly Met Arg Ala Phe   Arg His Gly Ile Leu   Thr Ala Met Gln Leu
            10905                  10910                  10915

ctt ttt cca aag gcc   gtg gta aac cct aac   aaa gac cca tgt tat   118452
Leu Phe Pro Lys Ala   Val Val Asn Pro Asn   Lys Asp Pro Cys Tyr
            10920                  10925                  10930
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ttt tat aaa act gca    tgt cct gaa cct acc    gtt gag gtg ttg gat    118497
Phe Tyr Lys Thr Ala    Cys Pro Glu Pro Thr    Val Glu Val Leu Asp
            10935                  10940                  10945

gat gat aat tta ttg    gat ata acc agc cat    tct gac atc gat ttt    118542
Asp Asp Asn Leu Leu    Asp Ile Thr Ser His    Ser Asp Ile Asp Phe
            10950                  10955                  10960

tac ata gaa aat ggc    gaa tta tac acg tgt    gta gaa gag aat tat    118587
Tyr Ile Glu Asn Gly    Glu Leu Tyr Thr Cys    Val Glu Glu Asn Tyr
            10965                  10970                  10975

aca gag gat gta tgg    ttt ttt gat aca cag    aca acg tct gaa gtc    118632
Thr Glu Asp Val Trp    Phe Phe Asp Thr Gln    Thr Thr Ser Glu Val
            10980                  10985                  10990

cat aca cac gcc gat    gta tca aac aat gaa    aac ttg cat gaa act    118677
His Thr His Ala Asp    Val Ser Asn Asn Glu    Asn Leu His Glu Thr
            10995                  11000                  11005

cta ccc tgt aac tgt    aaa gag aaa ata ggt    ttc agg gta tgc gta    118722
Leu Pro Cys Asn Cys    Lys Glu Lys Ile Gly    Phe Arg Val Cys Val
            11010                  11015                  11020

cca atc cca aat ccc    tat gcg tta gtg ggg    tct tcc act tta aag    118767
Pro Ile Pro Asn Pro    Tyr Ala Leu Val Gly    Ser Ser Thr Leu Lys
            11025                  11030                  11035

ggg ttt gca caa ata    tta cag caa gcg gtg    ttg ctg gaa cgg gaa    118812
Gly Phe Ala Gln Ile    Leu Gln Gln Ala Val    Leu Leu Glu Arg Glu
            11040                  11045                  11050

ttt gtt gaa tat att    ggt ccg tat tta cgg    gac ttt tcg ttt ata    118857
Phe Val Glu Tyr Ile    Gly Pro Tyr Leu Arg    Asp Phe Ser Phe Ile
            11055                  11060                  11065

gat act ggt gtt tat    agc cac gga cat agt    tta aga ctg cct ttt    118902
Asp Thr Gly Val Tyr    Ser His Gly His Ser    Leu Arg Leu Pro Phe
            11070                  11075                  11080

ttc tcc aaa gta aca    acc aca ggg acg gcg    gtt gga caa cta ctc    118947
Phe Ser Lys Val Thr    Thr Thr Gly Thr Ala    Val Gly Gln Leu Leu
            11085                  11090                  11095

cca ttt tat gtt gta    cct gag cag tgt att    gat ata tta gcg ttt    118992
Pro Phe Tyr Val Val    Pro Glu Gln Cys Ile    Asp Ile Leu Ala Phe
            11100                  11105                  11110

gtg aca tca cat aga    aac ccg gca aac ttt    cat ttt cat tca aga    119037
Val Thr Ser His Arg    Asn Pro Ala Asn Phe    His Phe His Ser Arg
            11115                  11120                  11125

ccg cag tcg aat gtt    cca gtg caa ttt att    tta cat aac ctt ggg    119082
Pro Gln Ser Asn Val    Pro Val Gln Phe Ile    Leu His Asn Leu Gly
            11130                  11135                  11140

ggg gaa tac gca gag    ttt ttt gaa cgt aag    gtt gcg cgt aat aaa    119127
Gly Glu Tyr Ala Glu    Phe Phe Glu Arg Lys    Val Ala Arg Asn Lys
            11145                  11150                  11155
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caa ata ttt agc tcc   ccg caa ata tct tta   aca aag gct cta aaa   119172
Gln Ile Phe Ser Ser   Pro Gln Ile Ser Leu   Thr Lys Ala Leu Lys
          11160   11165   11170

gag cgc ggg gta act   tgt ctg gac gca ttt   aca ctg gag gcc ttt   119217
Glu Arg Gly Val Thr   Cys Leu Asp Ala Phe   Thr Leu Glu Ala Phe
          11175   11180   11185

gtc gac agc aca ata   tta gaa tct att gtg   gag cat att gct gtt   119262
Val Asp Ser Thr Ile   Leu Glu Ser Ile Val   Glu His Ile Ala Val
          11190   11195   11200

cat ttc ccc ggg cgt   gat cgc gaa tat acc   tta aca tca tca aag   119307
His Phe Pro Gly Arg   Asp Arg Glu Tyr Thr   Leu Thr Ser Ser Lys
          11205   11210   11215

tgt atc gcc atc aaa   agg gac tgg gtg tta   ttt cag ctc ata tgc   119352
Cys Ile Ala Ile Lys   Arg Asp Trp Val Leu   Phe Gln Leu Ile Cys
          11220   11225   11230

gga aca aaa ggg ttc   act tgt ctt cga tat   ccc cat cgc gga gga   119397
Gly Thr Lys Gly Phe   Thr Cys Leu Arg Tyr   Pro His Arg Gly Gly
          11235   11240   11245

aga acg gct ccc cgg   aca ttt gtg tct ctg   cga gtg gat cat cac   119442
Arg Thr Ala Pro Arg   Thr Phe Val Ser Leu   Arg Val Asp His His
          11250   11255   11260

aac cgt ttg tgt att   tcg ctt gca caa caa   tgt ttt gct aca aag   119487
Asn Arg Leu Cys Ile   Ser Leu Ala Gln Gln   Cys Phe Ala Thr Lys
          11265   11270   11275

tgc gat agc aat cgc   atg cat aca atc ttt   act cta gaa gta cct   119532
Cys Asp Ser Asn Arg   Met His Thr Ile Phe   Thr Leu Glu Val Pro
          11280   11285   11290

aat tat cca aat tta   act tcg agt taa caccaaccgt gtgatactac   119579
Asn Tyr Pro Asn Leu   Thr Ser Ser
          11295

atcgtgcttg aattgccatc ttccacgggt c atg cag   gct tta gga atc   119628
                                   Met Gln   Ala Leu Gly Ile
                                       11300

aag   aca gaa cat ttt ata   att atg tgt cta ctt   agc gga cat gct 119673
Lys   Thr Glu His Phe Ile   Ile Met Cys Leu Leu   Ser Gly His Ala
11305   11310   11315

gtt   ttt acc cta tgg tat   acc gct cgt gta aag   ttt gaa cat gag 119718
Val   Phe Thr Leu Trp Tyr   Thr Ala Arg Val Lys   Phe Glu His Glu
11320   11325   11330

tgt   gtg tat gca acc acg   gtg att aat ggt gga   ccg gtt gta tgg 119763
Cys   Val Tyr Ala Thr Thr   Val Ile Asn Gly Gly   Pro Val Val Trp
11335   11340   11345

ggg   tct tat aac aac tct   ctt ata tat gta acg   ttt gta aac cac 119808
Gly   Ser Tyr Asn Asn Ser   Leu Ile Tyr Val Thr   Phe Val Asn His
11350   11355   11360

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tca  acg ttt ttg gat ggc  cta tct gga tac gat  tac agc tgc cgg 119853
Ser  Thr Phe Leu Asp Gly  Leu Ser Gly Tyr Asp  Tyr Ser Cys Arg
11365                11370                11375

gaa  aat cta tta tca gga  gat act atg gta aaa  acc gct att tct 119898
Glu  Asn Leu Leu Ser Gly  Asp Thr Met Val Lys  Thr Ala Ile Ser
11380                11385                11390

aca  cct ttg cat gac aaa  att cga att gtt ctg  gga aca cgt aat 119943
Thr  Pro Leu His Asp Lys  Ile Arg Ile Val Leu  Gly Thr Arg Asn
11395                11400                11405

tgt  cac gct tat ttt tgg  tgc gtg cag cta aaa  atg att ttt ttt 119988
Cys  His Ala Tyr Phe Trp  Cys Val Gln Leu Lys  Met Ile Phe Phe
11410                11415                11420

gca  tgg ttt gta tat ggt  atg tat tta caa ttt  cga cga ata cgt 120033
Ala  Trp Phe Val Tyr Gly  Met Tyr Leu Gln Phe  Arg Arg Ile Arg
11425                11430                11435

cgt  atg ttt ggg cca ttc  cga tca tcc tgt gag  tta ata tcc ccc 120078
Arg  Met Phe Gly Pro Phe  Arg Ser Ser Cys Glu  Leu Ile Ser Pro
11440                11445                11450

aca  tca tat tca ctg aat  tac gta aca cgg gtt  att tcg aac att 120123
Thr  Ser Tyr Ser Leu Asn  Tyr Val Thr Arg Val  Ile Ser Asn Ile
11455                11460                11465

ctt  ctt ggt tac cca tat  aca aag ttg gca agg  ttg tta tgt gat 120168
Leu  Leu Gly Tyr Pro Tyr  Thr Lys Leu Ala Arg  Leu Leu Cys Asp
11470                11475                11480

gtt  tcc atg cga cgg gat  ggt atg agt aaa gta  ttt aat gct gac 120213
Val  Ser Met Arg Arg Asp  Gly Met Ser Lys Val  Phe Asn Ala Asp
11485                11490                11495

cct  ata agt ttt tta tat  atg cat aaa ggt gtt  acg tta ttg atg 120258
Pro  Ile Ser Phe Leu Tyr  Met His Lys Gly Val  Thr Leu Leu Met
11500                11505                11510

ctt  ttg gag gtt atc gct  cat ata tca tct gga  tgt att gtg ctt 120303
Leu  Leu Glu Val Ile Ala  His Ile Ser Ser Gly  Cys Ile Val Leu
11515                11520                11525

tta  acg ctt ggc gtt gca  tat aca cca tgc gcg  tta tta tac ccc 120348
Leu  Thr Leu Gly Val Ala  Tyr Thr Pro Cys Ala  Leu Leu Tyr Pro
11530                11535                11540

aca  tac att cgg att ctg  gcc tgg gtt gtt gta  tgc acg ctc gct 120393
Thr  Tyr Ile Arg Ile Leu  Ala Trp Val Val Val  Cys Thr Leu Ala
11545                11550                11555

ata  gta gag ctt ata tct  tat gtt aga cca aaa  cca acc aag gat 120438
Ile  Val Glu Leu Ile Ser  Tyr Val Arg Pro Lys  Pro Thr Lys Asp
11560                11565                11570

aat  cat tta aat cat atc  aat acg ggg gga ata  cgt ggt ata tgc 120483
Asn  His Leu Asn His Ile  Asn Thr Gly Gly Ile  Arg Gly Ile Cys
11575                11580                11585
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aca      aca tgt tgc gct aca      gta atg tcc ggc ctt      gct ata aaa tgt   120528
Thr      Thr Cys Cys Ala Thr      Val Met Ser Gly Leu      Ala Ile Lys Cys
11590                              11595                     11600

ttt      tat atc gtc ata ttt      gct ata gca gtg gtt      att ttt atg cat   120573
Phe      Tyr Ile Val Ile Phe      Ala Ile Ala Val Val      Ile Phe Met His
11605                              11610                     11615

tac      gaa caa agg gtg cag      gta agc ttg ttt ggg      gaa agt gaa aac   120618
Tyr      Glu Gln Arg Val Gln      Val Ser Leu Phe Gly      Glu Ser Glu Asn
11620                              11625                     11630

tcc      cag aag cat taa tcatgtgact aaacacgccc attgcggggt tgggtgagcc   120673
Ser      Gln Lys His
11635

tataaattct acaacattgg cggaagatac aggcaactgc aaacacgcaa ttgtcagata   120733

ttttgcagcc atg gcc      tct gct tca att cca      acc gac cca gac gtg          120779
           Met Ala      Ser Ala Ser Ile Pro      Thr Asp Pro Asp Val
           11640                   11645                     11650

tct act att tgt gaa      gac ttt atg aat ttg      cta cca gac gaa cct   120824
Ser Thr Ile Cys Glu      Asp Phe Met Asn Leu      Leu Pro Asp Glu Pro
            11655                    11660                    11665

tcg gat gac ttt gca      ttg gaa gtc acc gat      tgg gca aat gat gaa   120869
Ser Asp Asp Phe Ala      Leu Glu Val Thr Asp      Trp Ala Asn Asp Glu
            11670                    11675                    11680

gct att ggc tcc act      cca ggc gag gac tcc      aca acg tct aga act   120914
Ala Ile Gly Ser Thr      Pro Gly Glu Asp Ser      Thr Thr Ser Arg Thr
            11685                    11690                    11695

gtg tat gtg gag cgt      act gca gat aca gca      tat aat cca cgg tat   120959
Val Tyr Val Glu Arg      Thr Ala Asp Thr Ala      Tyr Asn Pro Arg Tyr
            11700                    11705                    11710

tcc aaa cga agg cac      gga agg cgt gaa agc      tac cac cac aat cgc   121004
Ser Lys Arg Arg His      Gly Arg Arg Glu Ser      Tyr His His Asn Arg
            11715                    11720                    11725

ccg aaa act ttg gtt      gtt gta tta ccc gat      tca aac cat cat gga   121049
Pro Lys Thr Leu Val      Val Val Leu Pro Asp      Ser Asn His His Gly
            11730                    11735                    11740

gga aga gac gtg gag      act gga tat gca cgc      atc gaa cgg gga cat   121094
Gly Arg Asp Val Glu      Thr Gly Tyr Ala Arg      Ile Glu Arg Gly His
            11745                    11750                    11755

cga cga tca tcc aga      tct tat aac act caa      agt tca aga aaa cac   121139
Arg Arg Ser Ser Arg      Ser Tyr Asn Thr Gln      Ser Ser Arg Lys His
            11760                    11765                    11770

cgt gat cga tcc ctg      tca aat cga aga cgg      cgt cct aca acg cct   121184
Arg Asp Arg Ser Leu      Ser Asn Arg Arg Arg      Arg Pro Thr Thr Pro
            11775                    11780                    11785

cct gca atg acc acg      gga gaa aga aat gat      cag aca cat gac gaa   121229
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Pro Ala Met Thr Thr    Gly Glu Arg Asn Asp    Gln Thr His Asp Glu
            11790                   11795                  11800

tcg tac agg ttg cga    ttt tcc aag aga gac    gcc cgc cga gag cgt    121274
Ser Tyr Arg Leu Arg    Phe Ser Lys Arg Asp    Ala Arg Arg Glu Arg
            11805                   11810                  11815

att cga aaa gag tat    gat atc ccg gtc gat    cga att acg ggc cgt    121319
Ile Arg Lys Glu Tyr    Asp Ile Pro Val Asp    Arg Ile Thr Gly Arg
            11820                   11825                  11830

gct att gaa gtc gtc    tcc acc gcg gga gcc    agc gtg acc att gac    121364
Ala Ile Glu Val Val    Ser Thr Ala Gly Ala    Ser Val Thr Ile Asp
            11835                   11840                  11845

tcg gta cgc cat tta    gat gaa aca att gaa    aaa ctg gta gtc cga    121409
Ser Val Arg His Leu    Asp Glu Thr Ile Glu    Lys Leu Val Val Arg
            11850                   11855                  11860

tat gcc aca ata caa    gag ggt gat tca tgg    gct tcc ggt gga tgt    121454
Tyr Ala Thr Ile Gln    Glu Gly Asp Ser Trp    Ala Ser Gly Gly Cys
            11865                   11870                  11875

ttt ccg ggg ata aaa    caa aac aca tct tgg    ccg gag ttg atg ttg    121499
Phe Pro Gly Ile Lys    Gln Asn Thr Ser Trp    Pro Glu Leu Met Leu
            11880                   11885                  11890

tac gga cat gaa ctt    tat cgt acc ttt gag    tca tat aaa atg gac    121544
Tyr Gly His Glu Leu    Tyr Arg Thr Phe Glu    Ser Tyr Lys Met Asp
            11895                   11900                  11905

tca cgt att gcc cgc    gcg ttg cgt gag aga    gtc ata cgt gga gaa    121589
Ser Arg Ile Ala Arg    Ala Leu Arg Glu Arg    Val Ile Arg Gly Glu
            11910                   11915                  11920

tct ttg att gaa gcg    ttg gag tct gcg gat    gaa ctg tta acg tgg    121634
Ser Leu Ile Glu Ala    Leu Glu Ser Ala Asp    Glu Leu Leu Thr Trp
            11925                   11930                  11935

att aaa atg tta gcg    gca aaa aac ttg ccc    atc tac aca aat aat    121679
Ile Lys Met Leu Ala    Ala Lys Asn Leu Pro    Ile Tyr Thr Asn Asn
            11940                   11945                  11950

ccc att gtt gca acc    tcg aag tca ctt ttg    gag aat tta aag tta    121724
Pro Ile Val Ala Thr    Ser Lys Ser Leu Leu    Glu Asn Leu Lys Leu
            11955                   11960                  11965

aag ctg ggg cct ttt    gta aga tgt ctt ctt    cta aac agg gac aac    121769
Lys Leu Gly Pro Phe    Val Arg Cys Leu Leu    Leu Asn Arg Asp Asn
            11970                   11975                  11980

gat ttg ggg tct cgt    act ctc ccc gaa ctg    ttg cgc cag caa cgt    121814
Asp Leu Gly Ser Arg    Thr Leu Pro Glu Leu    Leu Arg Gln Gln Arg
            11985                   11990                  11995

ttt agt gat atc acg    tgt att act act tat    atg ttt gtt atg att    121859
Phe Ser Asp Ile Thr    Cys Ile Thr Thr Tyr    Met Phe Val Met Ile
            12000                   12005                  12010

gcc cgc att gct aat    ata gtt gtc cgt ggc    tct aaa ttt gtg gaa    121904
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Ala Arg Ile Ala Asn    Ile Val Val Arg Gly    Ser Lys Phe Val Glu
          12015                     12020                   12025

tat gat gat atc agt    tgt aac gtt caa gtg    tta caa gaa tat aca    121949
Tyr Asp Asp Ile Ser    Cys Asn Val Gln Val    Leu Gln Glu Tyr Thr
          12030                     12035                   12040

ccc ggg tca tgt ctg    gcc ggt gtt tta gag    gcc cta atc acc cac    121994
Pro Gly Ser Cys Leu    Ala Gly Val Leu Glu    Ala Leu Ile Thr His
          12045                     12050                   12055

caa cgc gag tgt ggt    cgt gtt gaa tgt acc    ctc tca act tgg gcc    122039
Gln Arg Glu Cys Gly    Arg Val Glu Cys Thr    Leu Ser Thr Trp Ala
          12060                     12065                   12070

ggg cat ctt tct gac    gcc cgt cca tac ggt    aaa tat ttt aag tgt    122084
Gly His Leu Ser Asp    Ala Arg Pro Tyr Gly    Lys Tyr Phe Lys Cys
          12075                     12080                   12085

agt acc ttt aac tgc    taa aataaaaat accttttca tgcttgtcaa           122132
Ser Thr Phe Asn Cys
          12090

aacatactaa tttgtatttt taatcattaa gcatatttac ctgttagaat agtaaatacc 122192

tatttcatgc ttgtaaaaca tatcaattta tatttttaat cattatacac cacccttga  122252

ttttatcaat tgtttatgtg attctatatt aataaaagac taataaaaat gtaatattgt 122312

gggagttttt aaggcgacgt tggggatata tgggcgggat tacattgctt tcaaaccaat 122372

atctttgcaa ttccgtctct gattcgggta aaacacacac cagacgtgta ccgaacgttt 122432

aatta atg gat aca acg gga    gct tcc gaa agc agt    caa ccc atc cga   122479
      Met Asp Thr Thr Gly    Ala Ser Glu Ser Ser    Gln Pro Ile Arg
                 12095                     12100

gtg    aat ctt aaa cct gac    ccg ttg gcg tcg ttt    aca caa gtt ata   122524
Val    Asn Leu Lys Pro Asp    Pro Leu Ala Ser Phe    Thr Gln Val Ile
12105                     12110                     12115

ccg    cca ctg gcg ttg gaa    aca acg tgg aca tgc    cct gcc aac tca   122569
Pro    Pro Leu Ala Leu Glu    Thr Thr Trp Thr Cys    Pro Ala Asn Ser
12120                     12125                     12130

cat    gca ccg acg cca tcc    cct ctg tac ggt gtt    aag agg tta tgt   122614
His    Ala Pro Thr Pro Ser    Pro Leu Tyr Gly Val    Lys Arg Leu Cys
12135                     12140                     12145

gct    ctt cga gca aca tgc    ggc cgg gct gat gat    tta cac gct ttt   122659
Ala    Leu Arg Ala Thr Cys    Gly Arg Ala Asp Asp    Leu His Ala Phe
12150                     12155                     12160

ttg    att gga ctt gga cgt    cga gat aaa cca tct    gaa tcc cca atg   122704
Leu    Ile Gly Leu Gly Arg    Arg Asp Lys Pro Ser    Glu Ser Pro Met
12165                     12170                     12175

tat    gtt gac cta cag ccg    ttt tgc agc ctc cta    aat tcc caa cga   122749
Tyr    Val Asp Leu Gln Pro    Phe Cys Ser Leu Leu    Asn Ser Gln Arg
12180                     12185                     12190
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ctg   tta ccg gaa atg gct    aat tat aac acc cta    tgc gat gca ccc 122794
Leu   Leu Pro Glu Met Ala    Asn Tyr Asn Thr Leu    Cys Asp Ala Pro
12195                 12200                 12205

ttc   agc gcc gca act cag    cag atg atg ctg gag    tcc gga cag ctg 122839
Phe   Ser Ala Ala Thr Gln    Gln Met Met Leu Glu    Ser Gly Gln Leu
12210                 12215                 12220

ggt   gta cat ctg gcg gct    att ggg tat cac tgt    cat tgt aaa tcc 122884
Gly   Val His Leu Ala Ala    Ile Gly Tyr His Cys    His Cys Lys Ser
12225                 12230                 12235

ccc   ttc tcg gcg gag tgt    tgg acc ggt gca tcc    gag gca tac gat 122929
Pro   Phe Ser Ala Glu Cys    Trp Thr Gly Ala Ser    Glu Ala Tyr Asp
12240                 12245                 12250

cat   gtt gta tgt ggg gga    aaa gcc cga gcg gct    gtc ggc gga cta 122974
His   Val Val Cys Gly Gly    Lys Ala Arg Ala Ala    Val Gly Gly Leu
12255                 12260                 12265

tga actacacatt taaataaaaa tacgtacaat cgaaaaaagg tgtattttat       123027

ttagtgatta catcaatacg ccctccgtag gttcggcaaa tctaacccgg tgacagaccg 123087

gctgttgacg gggggatcct ttcaatattc cacgaatgtt ggaaactgtt ggtcttcctt 123147

gggctgttag ggttgggaga gtgggtcggt ctgacgtggt aagtgcggct tcaccagagt 123207

cttctgtcaa gttgcatgtt aacgtcgacg ttatacaagg tgtttcagtg gtattttgcg 123267

cgatattctc ccaaaacata agacgttgca tatgcatatc ataaatatta ccccgccata 123327

aacagagatc tctgttactt aaaccgtgtg tgcggagaaa tgtacccata gatggagcca 123387

gtaaatgcaa gcccgtacca cattcatacc caagcgttgt ggatcgcttt ccttcatcg 123447

ccaaaataat aaatgtcctt gcacctccag gcgtcattgc acgccctatt agacgggcaa 123507

ggctaagacg ttcgccgggt ttgctatatt tgccaataat tacataggtt ttggtacagg 123567

taatgtgtaa cgttcctccg cctggcaggt ctacagttct ccccgcaagc actcgtaata 123627

aacatcgcgt ttctgacgcg ggatttttcct cggcggtggc gtttaaactg ggacgcacca 123687

gagtggagcc cataataaat gcgggaacat gcccatatgc aagtgtctca gaaattacat 123747

gcattttatg attttacggg ggtgggttac gataatagct attaaacaaa cacccaataa 123807

agcattttt gtagaacctt tattgggtaa cacagtcttt tcacgtgaca ggcaatgtat 123867

aaataacgta cggatgcact taagatgtat cgcacataaa tttatataag ctgtagcaaa 123927

gtataagcaa atcctgttaa tattatattt ttgggatccg ca atg    tcc agg gta 123981
                                               Met    Ser Arg Val
                                               12270

tcg gag   tat ggg gta ccg gaa    ggt gtt cgg gaa tct    gat agc gat 124026
Ser Glu   Tyr Gly Val Pro Glu    Gly Val Arg Glu Ser    Asp Ser Asp
  12275                 12280                 12285
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aca gac    tct gtg ttt atg tat    cag cat aca gag ctt    atg cag aac 124071
Thr Asp    Ser Val Phe Met Tyr    Gln His Thr Glu Leu    Met Gln Asn
    12290                12295                12300

aac gcg    tcg cca ctc gtc gtt    caa aca aga cca ccg    gcg gtt ctt 124116
Asn Ala    Ser Pro Leu Val Val    Gln Thr Arg Pro Pro    Ala Val Leu
    12305                12310                12315

att cca    ctg gtt gat gtc cca    agg cca cga tcc cgg    aga aag gcg 124161
Ile Pro    Leu Val Asp Val Pro    Arg Pro Arg Ser Arg    Arg Lys Ala
    12320                12325                12330

tcc gcg    caa ctg aaa atg caa    atg gac agg tta tgc    aac gta ctg 124206
Ser Ala    Gln Leu Lys Met Gln    Met Asp Arg Leu Cys    Asn Val Leu
    12335                12340                12345

ggt gta    gta ctc cag atg gcg    acg ttg gct ttg gtg    aca tat ata 124251
Gly Val    Val Leu Gln Met Ala    Thr Leu Ala Leu Val    Thr Tyr Ile
    12350                12355                12360

gct ttt    gtt gtg cat aca cgc    gcg aca agc tgc aag    cga gaa taa 124296
Ala Phe    Val Val His Thr Arg    Ala Thr Ser Cys Lys    Arg Glu
    12365                12370                12375

ataccttccc cttccggaca gtagtttcat gtagttgagt tgggaggttc ctcgggaaaa 124356

acggcaacaa tggcgaccac gacagcagta agggtgagaa taccaaaaag aattaaaaaa 124416

gccggtacac agcatttgcg aattcttaga aaagccagct gaagtctgtg gattccatca 124476

taagcgcagt ctaggcaatc gtaagactgt tgggtggtgc cattctccac gtgaggaaaa 124536

agaggcgggg agaacaccag actctcgcgg cttctgtaag ggggggcgc gtctgccacg 124596

gcctcggcgt atgtgggtag gtaggggatg gggtcgcaa cgtcatccat gctgggggac 124656

gacgtgaggg tgaccggcgg ggtcccaggt cggcgggagt agtgcacggt cgccatccga 124716

gcagtaaacg aggggtggac gcaaaaggcg cgggttttgt taaaggctgg cggggggggg 124776

tttcccggca aaaaatccca tccccccga tggtcgcccc gcaaacgcgc ggggaggtgg 124836

ggtcgctttt tttttctct ctcgaggggg ccgcgagagg gctggcct          124884
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<210>  52
<211>  278
<212>  PRT
<213>  Varicella zoster

<400>  52

Met Phe Cys Thr Ser Pro Ala Thr Arg Gly Asp Ser Ser Glu Ser Lys
1                   5                   10                  15


Pro Gly Ala Ser Val Asp Val Asn Gly Lys Met Glu Tyr Gly Ser Ala
                20                  25                  30
```

Pro Gly Pro Leu Asn Gly Arg Asp Thr Ser Arg Gly Pro Gly Ala Phe
      35   40   45

Cys Thr Pro Gly Trp Glu Ile His Pro Ala Arg Leu Val Glu Asp Ile
      50   55   60

Asn Arg Val Phe Leu Cys Ile Ala Gln Ser Ser Gly Arg Val Thr Arg
65   70   75   80

Asp Ser Arg Arg Leu Arg Arg Ile Cys Leu Asp Phe Tyr Leu Met Gly
              85   90   95

Arg Thr Arg Gln Arg Pro Thr Leu Ala Cys Trp Glu Glu Leu Leu Gln
              100   105   110

Leu Gln Pro Thr Gln Thr Gln Cys Leu Arg Ala Thr Leu Met Glu Val
          115   120   125

Ser His Arg Pro Pro Arg Gly Glu Asp Gly Phe Ile Glu Ala Pro Asn
      130   135   140

Val Pro Leu His Arg Ser Ala Leu Glu Cys Asp Val Ser Asp Asp Gly
145   150   155   160

Gly Glu Asp Asp Ser Asp Asp Asp Gly Ser Thr Pro Ser Asp Val Ile
              165   170   175

Glu Phe Arg Asp Ser Asp Ala Glu Ser Ser Asp Gly Glu Asp Phe Ile
          180   185   190

Val Glu Glu Glu Ser Glu Glu Ser Thr Asp Ser Cys Glu Pro Asp Gly
          195   200   205

Val Pro Gly Asp Cys Tyr Arg Asp Gly Asp Gly Cys Asn Thr Pro Ser
      210   215   220

Pro Lys Arg Pro Gln Arg Ala Ile Glu Arg Tyr Ala Gly Ala Glu Thr
225   230   235   240

Ala Glu Tyr Thr Ala Ala Lys Ala Leu Thr Ala Leu Gly Glu Gly Gly
              245   250   255

Val Asp Trp Lys Arg Arg Arg His Glu Ala Pro Arg Arg His Asp Ile
              260   265   270

Pro Pro Pro His Gly Val
        275

<210> 53
<211> 180
<212> PRT
<213> Varicella zoster

<400> 53

Met Asn Leu Cys Gly Ser Arg Gly Glu His Pro Gly Gly Glu Tyr Ala
1   5   10   15

Gly Leu Tyr Cys Thr Arg His Asp Thr Pro Ala His Gln Ala Leu Met
                20   25   30

Asn Asp Ala Glu Arg Tyr Phe Ala Ala Ala Leu Cys Ala Ile Ser Thr
            35   40   45

Glu Ala Tyr Glu Ala Phe Ile His Ser Pro Ser Glu Arg Pro Cys Ala
        50   55   60

Ser Leu Trp Gly Arg Ala Lys Asp Ala Phe Gly Arg Met Cys Gly Glu
65   70   75   80

Leu Ala Ala Asp Arg Gln Arg Pro Pro Ser Val Pro Pro Ile Arg Arg
                85   90   95

Ala Val Leu Ser Leu Leu Arg Glu Gln Cys Met Pro Asp Pro Gln Ser
                100   105   110

His Leu Glu Leu Ser Glu Arg Leu Ile Leu Met Ala Tyr Trp Cys Cys
            115   120   125

Leu Gly His Ala Gly Leu Pro Thr Ile Gly Leu Ser Pro Asp Asn Lys
        130   135   140

Cys Ile Arg Ala Glu Leu Tyr Asp Arg Pro Gly Gly Ile Cys His Arg
145   150   155   160

Leu Phe Asp Ala Tyr Leu Gly Cys Gly Ser Leu Gly Val Pro Arg Thr
                165   170   175

Tyr Glu Arg Ser
            180

<210> 54
<211> 102
<212> PRT
<213> Varicella zoster

<400> 54

Met Ala Gly Gln Asn Thr Met Glu Gly Glu Ala Val Ala Leu Leu Met
1   5   10   15

Glu Ala Val Val Thr Pro Arg Ala Gln Pro Asn Asn Thr Thr Ile Thr
                20   25   30

Ala Ile Gln Pro Ser Arg Ser Ala Glu Lys Cys Tyr Tyr Ser Asp Ser
            35   40   45

Glu Asn Glu Thr Ala Asp Glu Phe Leu Arg Arg Ile Gly Lys Tyr Gln
        50   55   60

His Lys Ile Tyr His Arg Lys Lys Phe Cys Tyr Ile Thr Leu Ile Ile
65   70   75   80

Val Phe Val Phe Ala Met Thr Gly Ala Ala Phe Ala Leu Gly Tyr Ile
                85   90   95

Thr Ser Gln Phe Val Gly
            100

<210> 55
<211> 1310
<212> PRT
<213> Varicella zoster

<400> 55

Met Asp Thr Pro Pro Met Gln Arg Ser Thr Pro Gln Arg Ala Gly Ser
1   5   10   15

Pro Asp Thr Leu Glu Leu Met Asp Leu Leu Asp Ala Ala Ala Ala Ala
                20   25   30

Ala Glu His Arg Ala Arg Val Val Thr Ser Ser Gln Pro Asp Asp Leu
            35   40   45

Leu Phe Gly Glu Asn Gly Val Met Val Gly Arg Glu His Glu Ile Val
        50   55   60

Ser Ile Pro Ser Val Ser Gly Leu Gln Pro Glu Pro Arg Thr Glu Asp
65   70   75   80

Val Gly Glu Glu Leu Thr Gln Asp Asp Tyr Val Cys Glu Asp Gly Gln
            85   90   95

Asp Leu Met Gly Ser Pro Val Ile Pro Leu Ala Glu Val Phe His Thr
            100   105   110

Arg Phe Ser Glu Ala Gly Ala Arg Glu Pro Thr Gly Ala Asp Arg Ser
            115   120   125

Leu Glu Thr Val Ser Leu Gly Thr Lys Leu Ala Arg Ser Pro Lys Pro
            130   135   140

Pro Met Asn Asp Gly Glu Thr Gly Arg Gly Thr Thr Pro Pro Phe Pro
145   150   155   160

Gln Ala Phe Ser Pro Val Ser Pro Ala Ser Pro Val Gly Asp Ala Ala
                        165   170   175

Gly Asn Asp Gln Arg Glu Asp Gln Arg Ser Ile Pro Arg Gln Thr Thr
                        180   185   190

Arg Gly Asn Ser Pro Gly Leu Pro Ser Val Val His Arg Asp Arg Gln
                        195   200   205

Thr Gln Ser Ile Ser Gly Lys Lys Pro Gly Asp Glu Gln Ala Gly His
            210   215   220

Ala His Ala Ser Gly Asp Gly Val Val Leu Gln Lys Thr Gln Arg Pro
225   230   235   240

Ala Gln Gly Lys Ser Pro Lys Lys Lys Thr Leu Lys Val Lys Val Pro
                        245   250   255

Leu Pro Ala Arg Lys Pro Gly Gly Pro Val Pro Gly Pro Val Glu Gln
                        260   265   270

Leu Tyr His Val Leu Ser Asp Ser Val Pro Ala Lys Gly Ala Lys Ala
                        275   280   285

Asp Leu Pro Phe Glu Thr Asp Asp Thr Arg Pro Arg Lys His Asp Ala
            290   295   300

Arg Gly Ile Thr Pro Arg Val Pro Gly Arg Ser Ser Gly Gly Lys Pro
305   310   315   320

Arg Ala Phe Leu Ala Leu Pro Gly Arg Ser His Ala Pro Asp Pro Ile
                325   330   335

Glu Asp Asp Ser Pro Val Glu Lys Lys Pro Lys Ser Arg Glu Phe Val
                340   345   350

Ser Ser Ser Ser Ser Ser Ser Ser Trp Gly Ser Ser Ser Glu Asp Glu
                355   360   365

Asp Asp Glu Pro Arg Arg Val Ser Val Gly Ser Glu Thr Thr Gly Ser
            370   375   380

Arg Ser Gly Arg Glu His Ala Pro Ser Pro Ser Asn Ser Asp Asp Ser
385   390   395   400

Asp Ser Asn Asp Gly Gly Ser Thr Lys Gln Asn Ile Gln Pro Gly Tyr
                405   410   415

Arg Ser Ile Ser Gly Pro Asp Pro Arg Ile Arg Lys Thr Lys Arg Leu
                420   425   430

Ala Gly Glu Pro Gly Arg Gln Arg Gln Lys Ser Phe Ser Leu Pro Arg
                435   440   445

Ser Arg Thr Pro Ile Ile Pro Pro Val Ser Gly Pro Leu Met Met Pro
    450   455   460

Asp Gly Ser Pro Trp Pro Gly Ser Ala Pro Leu Pro Ser Asn Arg Val
465   470   475   480

Arg Phe Gly Pro Ser Gly Glu Thr Arg Glu Gly His Trp Glu Asp Glu
                485   490   495

Ala Val Arg Ala Ala Arg Ala Arg Tyr Glu Ala Ser Thr Glu Pro Val
                500   505   510

Pro Leu Tyr Val Pro Glu Leu Gly Asp Pro Ala Arg Gln Tyr Arg Ala
                515   520   525

Leu Ile Asn Leu Ile Tyr Cys Pro Asp Arg Asp Pro Ile Ala Trp Leu
                530   535   540

Gln Asn Pro Lys Leu Thr Gly Val Asn Ser Ala Leu Asn Gln Phe Tyr
545   550   555   560

Gln Lys Leu Leu Pro Pro Gly Arg Ala Gly Thr Ala Val Thr Gly Ser
            565   570   575

Val Ala Ser Pro Val Pro His Val Gly Glu Ala Met Ala Thr Gly Glu
            580   585   590

Ala Leu Trp Ala Leu Pro His Ala Ala Ala Ala Val Ala Met Ser Arg
            595   600   605

Arg Tyr Asp Arg Ala Gln Lys His Phe Ile Leu Gln Ser Leu Arg Arg
    610   615   620

Ala Phe Ala Ser Met Ala Tyr Pro Glu Ala Thr Gly Ser Ser Pro Ala
625   630   635   640

Ala Arg Ile Ser Arg Gly His Pro Ser Pro Thr Thr Pro Ala Thr Gln
                645   650   655

Ala Pro Asp Pro Gln Pro Ser Ala Ala Ala Arg Ser Leu Ser Val Cys
            660   665   670

Pro Pro Asp Asp Arg Leu Arg Thr Pro Arg Lys Arg Lys Ser Gln Pro
        675   680   685

Val Glu Ser Arg Ser Leu Leu Asp Lys Ile Arg Glu Thr Pro Val Ala
    690   695   700

Asp Ala Arg Val Ala Asp Asp His Val Val Ser Lys Ala Lys Arg Arg
705   710   715   720

Val Ser Glu Pro Val Thr Ile Thr Ser Gly Pro Val Val Asp Pro Pro
            725   730   735

Ala Val Ile Thr Met Pro Leu Asp Gly Pro Ala Pro Asn Gly Gly Phe
            740   745   750

Arg Arg Ile Pro Arg Gly Ala Leu His Thr Pro Val Pro Ser Asp Gln
            755   760   765

Ala Arg Lys Ala Tyr Cys Thr Pro Glu Thr Ile Ala Arg Leu Val Asp
    770   775   780

Asp Pro Leu Phe Pro Thr Ala Trp Arg Pro Ala Leu Ser Phe Asp Pro
785   790   795   800

Gly Ala Leu Ala Glu Ile Ala Ala Arg Arg Pro Gly Gly Gly Asp Arg
            805   810   815

Arg Phe Gly Pro Pro Ser Gly Val Glu Ala Leu Arg Arg Arg Cys Ala
            820   825   830

Trp Met Arg Gln Ile Pro Asp Pro Glu Asp Val Arg Leu Leu Ile Ile
            835   840   845

Tyr Asp Pro Leu Pro Gly Glu Asp Ile Asn Gly Pro Leu Glu Ser Thr
            850   855   860

Leu Ala Thr Asp Pro Gly Pro Ser Trp Ser Pro Ser Arg Gly Gly Leu
865   870   875   880

Ser Val Val Leu Ala Ala Leu Ser Asn Arg Leu Cys Leu Pro Ser Thr
            885   890   895

His Ala Trp Ala Gly Asn Trp Thr Gly Pro Pro Asp Val Ser Ala Leu
            900   905   910

Asn Ala Arg Gly Val Leu Leu Leu Ser Thr Arg Asp Leu Ala Phe Ala
            915   920   925

Gly Ala Val Glu Tyr Leu Gly Ser Arg Leu Ala Ser Ala Arg Arg Arg
            930   935   940

Leu Leu Val Leu Asp Ala Val Ala Leu Glu Arg Trp Pro Arg Asp Gly
945   950   955   960

Pro Ala Leu Ser Gln Tyr His Val Tyr Val Arg Ala Pro Ala Arg Pro
            965   970   975

Asp Ala Gln Ala Val Val Arg Trp Pro Asp Ser Ala Val Thr Glu Gly
            980   985   990

Leu Ala Arg Ala Val Phe Ala Ser   Ser Arg Thr Phe Gly   Pro Ala Ser
            995   1000   1005

Phe Ala   Arg Ile Glu Thr Ala   Phe Ala Asn Leu Tyr   Pro Gly Glu
       1010   1015   1020

Gln Pro   Leu Cys Leu Cys Arg   Gly Gly Asn Val Ala   Tyr Thr Val
       1025   1030   1035

Cys Thr Arg Ala Gly Pro Lys Thr Arg Val Pro Leu Ser Pro Arg
    1040   1045   1050

Glu Tyr Arg Gln Tyr Val Leu Pro Gly Phe Asp Gly Cys Lys Asp
    1055   1060   1065

Leu Ala Arg Gln Ser Arg Gly Leu Gly Leu Gly Ala Ala Asp Phe
    1070   1075   1080

Val Asp Glu Ala Ala His Ser His Arg Ala Ala Asn Arg Trp Gly
    1085   1090   1095

Leu Gly Ala Ala Leu Arg Pro Val Phe Leu Pro Glu Gly Arg Arg
    1100   1105   1110

Pro Gly Ala Ala Gly Pro Glu Ala Gly Asp Val Pro Thr Trp Ala
    1115   1120   1125

Arg Val Phe Cys Arg His Ala Leu Leu Glu Pro Asp Pro Ala Ala
    1130   1135   1140

Glu Pro Leu Val Leu Pro Pro Val Ala Gly Arg Ser Val Ala Leu
    1145   1150   1155

Tyr Ala Ser Ala Asp Glu Ala Arg Asn Ala Leu Pro Pro Ile Pro
    1160   1165   1170

Arg Val Met Trp Pro Pro Gly Phe Gly Ala Ala Glu Thr Val Leu
    1175   1180   1185

Glu Gly Ser Asp Gly Thr Arg Phe Val Phe Gly His His Gly Gly
    1190   1195   1200

Ser Glu Arg Pro Ser Glu Thr Gln Ala Gly Arg Gln Arg Arg Thr
    1205   1210   1215

Ala Asp Asp Arg Glu His Ala Leu Glu Leu Asp Asp Trp Glu Val
    1220   1225   1230

Gly Cys Glu Asp Ala Trp Asp Ser Glu Glu Gly Gly Gly Asp Asp
    1235   1240   1245

Gly Asp Ala Pro Gly Ser Ser Phe Gly Val Ser Ile Val Ser Val
    1250   1255   1260

Ala Pro Gly Val Leu Arg Asp Arg Arg Val Gly Leu Arg Pro Ala
    1265   1270   1275

Val Lys Val Glu Leu Leu Ser Ser Ser Ser Ser Ser Glu Asp Glu
    1280   1285   1290

Asp Asp Val Trp Gly Gly Arg Gly Gly Arg Ser Pro Pro Gln Ser
    1295   1300   1305

Arg Gly
    1310

<210> 56
<211> 467
<212> PRT
<213> Varicella zoster

<400> 56

Met Asp Thr Ile Leu Ala Gly Gly Ser Gly Thr Ser Asp Ala Ser Asp
1   5   10   15

Asn Thr Cys Thr Ile Cys Met Ser Thr Val Ser Asp Leu Gly Lys Thr
            20   25   30

Met Pro Cys Leu His Asp Phe Cys Phe Val Cys Ile Arg Ala Trp Thr
            35   40   45

Ser Thr Ser Val Gln Cys Pro Leu Cys Arg Cys Pro Val Gln Ser Ile
    50   55   60

Leu His Lys Ile Val Ser Asp Thr Ser Tyr Lys Glu Tyr Glu Val His
65   70   75   80

Pro Ser Asp Asp Asp Gly Phe Ser Glu Pro Ser Phe Glu Asp Ser Ile
            85   90   95

Asp Ile Leu Pro Gly Asp Val Ile Asp Leu Leu Pro Pro Ser Pro Gly
            100   105   110

Pro Ser Arg Glu Ser Ile Gln Gln Pro Thr Ser Arg Ser Ser Arg Glu
            115   120   125

Pro Ile Gln Ser Pro Asn Pro Gly Pro Leu Gln Ser Ser Ala Arg Glu
    130   135   140

```
Pro Thr Ala Glu Ser Pro Ser Asp Ser Gln Gln Asp Ser Ile Gln Pro
145             150             155             160

Pro Thr Arg Asp Ser Ser Pro Gly Val Thr Lys Thr Cys Ser Thr Ala
                165             170             175

Ser Phe Leu Arg Lys Val Phe Phe Lys Asp Gln Pro Ala Val Arg Ser
            180             185             190

Ala Thr Pro Val Val Tyr Gly Ser Ile Glu Ser Ala Gln Gln Pro Arg
            195             200             205

Thr Gly Gly Gln Asp Tyr Arg Asp Arg Pro Val Ser Val Gly Ile Asn
        210             215             220

Gln Asp Pro Arg Thr Met Asp Arg Leu Pro Phe Arg Ala Thr Asp Arg
225             230             235             240

Gly Thr Glu Gly Asn Ala Arg Phe Pro Cys Tyr Met Gln Pro Leu Leu
                245             250             255

Gly Trp Leu Asp Asp Gln Leu Ala Glu Leu Tyr Gln Pro Glu Ile Val
            260             265             270

Glu Pro Thr Lys Met Leu Ile Leu Asn Tyr Ile Gly Ile Tyr Gly Arg
            275             280             285

Asp Glu Ala Gly Leu Lys Thr Ser Leu Arg Cys Leu Leu His Asp Ser
    290             295             300

Thr Gly Pro Phe Val Thr Asn Met Leu Phe Leu Leu Asp Arg Cys Thr
305             310             315             320

Asp Pro Thr Arg Leu Thr Met Gln Thr Trp Thr Trp Lys Asp Thr Ala
                325             330             335

Ile Gln Leu Ile Thr Gly Pro Ile Val Arg Pro Glu Thr Thr Ser Thr
            340             345             350

Gly Glu Thr Ser Arg Gly Asp Glu Arg Asp Thr Arg Leu Val Asn Thr
            355             360             365

Pro Gln Lys Val Arg Leu Phe Ser Val Leu Pro Gly Ile Lys Pro Gly
    370             375             380
```

Ser Ala Arg Gly Ala Lys Arg Arg Leu Phe His Thr Gly Arg Asp Val
385   390   395   400

Lys Arg Cys Leu Thr Ile Asp Leu Thr Ser Glu Ser Asp Ser Ala Cys
                405   410   415

Lys Gly Ser Lys Thr Arg Lys Val Ala Ser Pro Gln Gly Glu Ser Asn
            420   425   430

Thr Pro Ser Thr Ser Gly Ser Thr Ser Gly Ser Leu Lys His Leu Thr
            435   440   445

Lys Lys Ser Ser Ala Gly Lys Ala Gly Lys Gly Ile Pro Asn Lys Met
        450   455   460

Lys Lys Ser
465

<210> 57
<211> 305
<212> PRT
<213> Varicella zoster

<400> 57

Met Asp Val Ser Gly Glu Pro Thr Val Cys Ser Asn Ala Tyr Ala Asn
1   5   10   15

Glu Met Lys Leu Ser Asp Ser Lys Asp Ile Tyr Val Leu Ala His Pro
            20   25   30

Val Thr Lys Lys Thr Arg Lys Arg Pro Arg Gly Leu Pro Leu Gly Val
            35   40   45

Lys Leu Asp Pro Pro Thr Phe Lys Leu Asn Asn Met Ser His His Tyr
        50   55   60

Asp Thr Glu Thr Phe Thr Pro Val Ser Ser Gln Leu Asp Ser Val Glu
65   70   75   80

Val Phe Ser Lys Phe Asn Ile Ser Pro Glu Trp Tyr Asp Leu Leu Ser
                85   90   95

Asp Glu Leu Lys Glu Pro Tyr Ala Lys Gly Ile Phe Leu Glu Tyr Asn
            100   105   110

Arg Leu Leu Asn Ser Gly Glu Glu Ile Leu Pro Ser Thr Gly Asp Ile
    115   120   125

Phe Ala Trp Thr Arg Phe Cys Gly Pro Gln Ser Ile Arg Val Val Ile
    130   135   140

Ile Gly Gln Asp Pro Tyr Pro Thr Ala Gly His Ala His Gly Leu Ala
145   150   155   160

Phe Ser Val Lys Arg Gly Ile Thr Pro Pro Ser Ser Leu Lys Asn Ile
                165   170   175

Phe Ala Ala Leu Met Glu Ser Tyr Pro Asn Met Thr Pro Pro Thr His
                180   185   190

Gly Cys Leu Glu Ser Trp Ala Arg Gln Gly Val Leu Leu Leu Asn Thr
                195   200   205

Thr Leu Thr Val Arg Arg Gly Thr Pro Gly Ser His Val Tyr Leu Gly
    210   215   220

Trp Gly Arg Leu Val Gln Arg Val Leu Gln Arg Leu Cys Glu Asn Arg
225   230   235   240

Thr Gly Leu Val Phe Met Leu Trp Gly Ala His Ala Gln Lys Thr Thr
                245   250   255

Gln Pro Asn Ser Arg Cys His Leu Val Leu Thr His Ala His Pro Ser
                260   265   270

Pro Leu Ser Arg Val Pro Phe Arg Asn Cys Arg His Phe Val Gln Ala
                275   280   285

Asn Glu Tyr Phe Thr Arg Lys Gly Glu Pro Glu Ile Asp Trp Ser Val
    290   295   300

Ile
305

<210> 58
<211> 71
<212> PRT
<213> Varicella zoster

<400> 58

Met Asp Val Arg Glu Arg Asn Val Phe Gly Asn Ala Ser Val Ala Thr

```
1                 5                      10                          15

Pro Gly Glu His Gln Lys Phe Val Arg Glu Leu Ile Leu Ser Gly His
            20                  25                  30

Asn Asn Val Val Leu Gln Thr Tyr Thr Gly Lys Trp Ser Asp Cys Arg
            35                  40                  45

Lys His Gly Lys Ser Val Met Tyr Asn Thr Gly Glu Ala Arg His Pro
    50                  55                  60

Thr Cys Lys Ala His Gln Arg
65                  70


<210>  59
<211>  331
<212>  PRT
<213>  Varicella zoster

<400>  59

Met Gln Arg Ile Arg Pro Tyr Trp Ile Lys Phe Glu Gln Thr Gly Gly
1               5                      10                  15

Ala Gly Met Ala Asp Gly Met Ser Gly Ile Asn Ile Pro Ser Ile Leu
            20                  25                  30

Gly Cys Ser Val Thr Ile Asp Asn Leu Leu Thr Arg Ala Glu Glu Gly
            35                  40                  45

Leu Asp Val Ser Asp Val Ile Glu Asp Leu Arg Ile Gln Ala Ile Pro
    50                  55                  60

Arg Phe Val Cys Glu Ala Arg Glu Val Thr Gly Leu Lys Pro Arg Phe
65                  70                  75                  80

Leu Ala Asn Ser Val Val Ser Leu Arg Val Lys Pro Glu His Gln Glu
                85                  90                  95

Thr Val Leu Val Val Leu Asn Gly Asp Ser Ser Glu Val Ser Cys Asp
                100                 105                 110

Arg Tyr Tyr Met Glu Cys Val Thr Gln Pro Ala Phe Arg Gly Phe Ile
            115                 120                 125

Phe Ser Val Leu Thr Ala Val Glu Asp Arg Val Tyr Thr Val Gly Val
    130                 135                 140
```

Pro Pro Arg Leu Leu Ile Tyr Arg Met Thr Leu Phe Arg Pro Asp Asn
145   150   155   160

Val Leu Asp Phe Thr Leu Cys Val Ile Leu Met Tyr Leu Glu Gly Ile
                165   170   175

Gly Pro Ser Gly Ala Ser Pro Ser Leu Phe Val Gln Leu Ser Val Tyr
            180   185   190

Leu Arg Arg Val Glu Cys Gln Ile Gly Pro Leu Glu Lys Met Arg Arg
            195   200   205

Phe Leu Tyr Glu Gly Val Leu Trp Leu Leu Asn Thr Leu Met Tyr Val
        210   215   220

Val Asp Asn Asn Pro Phe Thr Lys Thr Arg Val Leu Pro His Tyr Met
225   230   235   240

Phe Val Lys Leu Leu Asn Pro Gln Pro Gly Thr Ala Pro Asn Ile Ile
                245   250   255

Lys Ala Ile Tyr Ser Cys Gly Val Gly Gln Arg Phe Asp Leu Pro His
                260   265   270

Gly Thr Pro Pro Cys Pro Asp Gly Val Val Gln Val Pro Pro Gly Leu
            275   280   285

Leu Asn Gly Pro Leu Arg Asp Ser Glu Tyr Gln Lys Ser Val Tyr Phe
        290   295   300

Trp Trp Leu Asn Arg Thr Met Val Thr Pro Lys Asn Val Gln Leu Phe
305   310   315   320

Glu Thr Tyr Lys Asn Ser Pro Arg Val Val Lys
            325   330

<210>   60
<211>   541
<212>   PRT
<213>   Varicella zoster

<400>   60

Met Glu Phe Pro Tyr His Ser Thr Val Ser Tyr Asn Gly Val Thr Phe
1   5   10   15

```
Tyr Phe Asn Glu Arg Ala Thr Arg Ala Tyr Phe Ile Cys Gly Gly Cys
        20                  25                  30

Leu Ile Ser Ile Pro Arg Lys His Gly Gly Glu Ile Ala Lys Phe Gly
        35                  40                  45

His Val Val Arg Gly Val Gly Pro Gly Asp Arg Ser Val Ala Ser Tyr
    50                  55                  60

Val Arg Ser Glu Leu Asn Arg Thr Gly Lys Thr Trp Ala Val Ser Ser
65                  70                  75                  80

Asn Asn Asn Cys Val Phe Leu Asp Arg Val Ala Leu Leu Ala Ala Gly
            85                  90                  95

Ser Gly Ala Val Asp Arg Asp Leu Cys Gly Thr Phe Asp Val Glu Val
            100                 105                 110

Glu Asp Pro Thr Leu Ala Asp Tyr Leu Val Ser Leu Pro Val Thr His
        115                 120                 125

Leu Thr Leu Val Ala Gly Val Asp Val Thr Arg Glu Asn Lys Leu Lys
    130                 135                 140

Leu Phe Pro Thr Pro Thr Ala Ile Asn Thr Thr Asn Gly Phe Met Tyr
145                 150                 155                 160

Val Pro Asn Glu Ala Ser Phe Ser Leu Val Tyr Met Arg Met Leu Glu
            165                 170                 175

Leu Pro Glu Ser Leu Gln Glu Leu Val Ser Gly Leu Phe Asp Gly Thr
            180                 185                 190

Pro Glu Ile Arg Asp Ala Leu Asn Gly Ser Asn Asp Asp Glu Lys Thr
            195                 200                 205

Ser Ile Ile Val Ser Arg Arg Ala Ala Asp Val Val Thr Glu Asp Val
    210                 215                 220

Lys Ala Asp Asp Val Pro Ile Ser Gly Glu Pro Tyr Ser Glu Lys Gln
225                 230                 235                 240

Pro Arg Arg Arg Lys Lys Ser Asp His Ile Thr Leu Ser Asn Phe Val
            245                 250                 255
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Gln Ile Arg Thr Ile Pro Arg Val Met Asp Ile Trp Asp Pro Arg His
        260   265   270

Lys Ala Thr Thr His Cys Ile Arg Ala Leu Ser Cys Ala Val Phe Phe
        275   280   285

Ala Asp Glu Val Ile Phe Lys Ala Arg Lys Trp Pro Gly Leu Glu Asp
        290   295   300

Glu Leu Asn Glu Ala Arg Glu Thr Ile Tyr Thr Ala Val Val Ala Val
305   310   315   320

Tyr Gly Glu Arg Gly Glu Leu Pro Phe Phe Gly His Ala Tyr Gly Arg
                    325   330   335

Asp Leu Thr Ser Cys Gln Arg Phe Val Ile Val Gln Tyr Ile Leu Ser
            340   345   350

Arg Trp Glu Ala Phe Asn Cys Tyr Ala Val Ile Glu Asp Leu Thr Arg
        355   360   365

Ser Tyr Val Asn Ala Leu Pro Ser Asp Asp Asp Thr Asp Gln Val Ala
    370   375   380

Gln Asp Leu Ile Arg Thr Ile Val Asp Thr Ala Asn Ser Leu Leu Arg
385   390   395   400

Glu Val Gly Phe Ile Gly Thr Leu Ala Glu Thr Leu Leu Phe Leu Pro
                    405   410   415

Leu Pro Gln Leu Pro Cys Tyr Lys Glu Thr Ser His Leu Ala Lys Lys
            420   425   430

Glu Gly Val Arg Ile Leu Arg Leu Ala Lys Thr Gly Val Gly Leu Ser
            435   440   445

Asp Thr Val Pro Val Asp Val Ser Val Thr Glu Arg His Glu Tyr Glu
    450   455   460

Ile Ser Arg Tyr Leu Asp Thr Leu Tyr Ser Gly Asp Pro Cys Tyr Asn
465   470   475   480

Gly Ala Val Arg Leu Cys Arg Leu Leu Gly Ser Ser Ile Pro Ile Ala
                485   490   495

Leu Tyr Tyr Asn Thr Ile Ser Gly Asn Ala Phe Glu Pro Tyr Phe Ala
            500   505   510

Gly Arg Arg Tyr Ile Ala Tyr Leu Gly Ala Leu Phe Phe Gly Arg Val
            515   520   525

His Gln Thr Pro Phe Gly Asp Gly Lys Lys Thr Gln Arg
    530   535   540

<210> 61
<211> 258
<212> PRT
<213> Varicella zoster

<400> 61

Met Ser Ala Ser Arg Ile Arg Ala Lys Cys Phe Arg Leu Gly Gln Arg
1   5   10   15

Cys His Thr Arg Phe Tyr Asp Val Leu Lys Lys Asp Ile Asp Asn Val
            20   25   30

Arg Arg Gly Phe Ala Asp Ala Phe Asn Pro Arg Leu Ala Lys Leu Leu
            35   40   45

Ser Pro Leu Ser His Val Asp Val Gln Arg Ala Val Arg Ile Ser Met
    50   55   60

Ser Phe Glu Val Asn Leu Gly Arg Arg Arg Pro Asp Cys Val Cys Ile
65   70   75   80

Ile Gln Thr Glu Ser Ser Gly Ala Gly Lys Thr Val Cys Phe Ile Val
            85   90   95

Glu Leu Lys Ser Cys Arg Phe Ser Ala Asn Ile His Thr Pro Thr Lys
            100   105   110

Tyr His Gln Phe Cys Glu Gly Met Arg Gln Leu Arg Asp Thr Met Ala
            115   120   125

Leu Ile Lys Glu Thr Thr Pro Thr Gly Ser Asp Glu Ile Met Val Thr
    130   135   140

Pro Leu Leu Val Phe Val Ser Gln Arg Gly Leu Asn Leu Leu Gln Val
145   150   155   160

Thr Arg Leu Pro Pro Lys Val Ile His Gly Asn Leu Val Met Leu Ala
                165   170   175

Ser His Leu Glu Asn Val Ala Glu Tyr Thr Pro Pro Ile Arg Ser Val
                180   185   190

Arg Glu Arg Arg Arg Leu Cys Lys Lys Lys Ile His Val Cys Ser Leu
                195   200   205

Ala Lys Lys Arg Ala Lys Ser Cys His Arg Ser Ala Leu Thr Lys Phe
                210   215   220

Glu Glu Asn Ala Ala Cys Gly Val Asp Leu Pro Leu Arg Arg Pro Ser
225   230   235   240

Leu Gly Ala Cys Gly Gly Ile Leu Gln Ser Ile Thr Gly Met Phe Ser
                245   250   255

His Gly

<210> 62
<211> 579
<212> PRT
<213> Varicella zoster

<400> 62

Met Thr Ala Arg Tyr Gly Phe Gly Ser Ile Ser Phe Pro Asn Lys Cys
1   5   10   15

Gly Ile Phe Leu Ser Thr Thr Lys Asn Phe Ile Ala Pro Asn Phe Pro
                20   25   30

Ile His Tyr Trp Thr Ala Pro Ala Phe Glu Leu Arg Gly Arg Met Asn
                35   40   45

Pro Asp Leu Glu Lys Asn Thr Leu Thr Leu Lys Asn Ala Ala Ala Val
        50   55   60

Ala Ala Leu Asp Asn Leu Arg Gly Glu Thr Ile Thr Leu Pro Thr Glu
65   70   75   80

Ile Asp Arg Arg Leu Lys Pro Leu Glu Glu Gln Leu Thr Arg Met Ala
                85   90   95

Lys Val Leu Asp Ser Leu Glu Thr Ala Ala Ala Glu Ala Glu Glu Ala

Asp Ala Gln Ser Glu Glu Cys Thr Arg Thr Glu Ile Ile Arg Asn Glu
        115   120   125

Ser Ile His Pro Glu Val Gln Ile Ala Lys Asn Asp Ala Pro Leu Gln
        130   135   140

Tyr Asp Thr Asn Phe Gln Val Asp Phe Ile Thr Leu Val Tyr Leu Gly
145   150   155   160

Arg Ala Arg Gly Asn Asn Ser Pro Gly Ile Val Phe Gly Pro Trp Tyr
                165   170   175

Arg Thr Leu Gln Glu Arg Leu Val Leu Asp Arg Pro Val Ala Ala Arg
                180   185   190

Gly Val Asp Cys Lys Asp Gly Arg Ile Ser Arg Thr Phe Met Asn Thr
        195   200   205

Thr Val Thr Cys Leu Gln Ser Ala Gly Arg Met Tyr Val Gly Asp Arg
        210   215   220

Ala Tyr Ser Ala Phe Glu Cys Ala Val Leu Cys Leu Tyr Leu Met Tyr
225   230   235   240

Arg Thr Ser Asn Ser Val His Glu Pro Gln Val Ser Ser Phe Gly Asn
                245   250   255

Leu Ile Glu His Leu Pro Glu Tyr Thr Glu Thr Phe Val Asn Tyr Met
                260   265   270

Thr Thr His Glu Asn Lys Asn Ser Tyr Gln Phe Cys Tyr Asp Arg Leu
        275   280   285

Pro Arg Asp Gln Phe His Ala Arg Gly Gly Arg Tyr Asp Gln Gly Ala
        290   295   300

Leu Thr Ser His Ser Val Met Asp Ala Leu Ile Arg Leu Gln Val Leu
305   310   315   320

Pro Pro Ala Pro Gly Gln Phe Asn Pro Gly Val Asn Asp Ile Ile Asp
                325   330   335

Arg Asn His Thr Ala Tyr Val Asp Lys Ile Gln Gln Ala Ala Ala Ala

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                340                        345                        350

Tyr Leu Glu Arg Ala Gln Asn Val Phe Leu Met Glu Asp Gln Thr Leu
    355                 360                 365

Leu Arg Leu Thr Ile Asp Thr Ile Thr Ala Leu Leu Leu Leu Arg Arg
    370                 375                 380

Leu Leu Trp Asn Gly Asn Val Tyr Gly Asp Lys Leu Lys Asn Asn Phe
385                 390                 395                 400

Gln Leu Gly Leu Ile Val Ser Glu Ala Thr Gly Thr Pro Thr Asn Asn
            405                 410                 415

Val Ile Leu Arg Gly Ala Thr Gly Phe Asp Gly Lys Phe Lys Ser Gly
            420                 425                 430

Asn Asn Asn Phe Gln Phe Leu Cys Glu Arg Tyr Ile Ala Pro Leu Tyr
        435                 440                 445

Thr Leu Asn Arg Thr Thr Glu Leu Thr Glu Met Phe Pro Gly Leu Val
    450                 455                 460

Ala Leu Cys Leu Asp Ala His Thr Gln Leu Ser Arg Gly Ser Leu Gly
465                 470                 475                 480

Arg Thr Val Ile Asp Ile Ser Ser Gly Gln Tyr Gln Asp Arg Leu Ile
            485                 490                 495

Ser Leu Ile Ala Leu Glu Leu Glu His Arg Arg Gln Asn Val Thr Ser
            500                 505                 510

Leu Pro Ile Ala Ala Val Val Ser Ile His Asp Ser Val Met Leu Gln
        515                 520                 525

Tyr Glu Arg Gly Leu Gly Met Leu Met His Gln Pro Arg Val Arg Ala
    530                 535                 540

Ala Leu Glu Glu Ser Arg Arg Leu Ala Gln Phe Asn Val Asn Ser Asp
545                 550                 555                 560

Tyr Asp Leu Leu Tyr Phe Val Cys Leu Gly Val Ile Pro Gln Phe Ala
            565                 570                 575

Ser Thr Pro
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<210> 63
<211> 605
<212> PRT
<213> Varicella zoster

<400> 63

Met Ala Ala Glu Ala Asp Glu Glu Asn Cys Glu Ala Leu Tyr Val Ala
1   5   10   15

Gly Tyr Leu Ala Leu Tyr Ser Lys Asp Glu Gly Glu Leu Asn Ile Thr
            20   25   30

Pro Glu Ile Val Arg Ser Ala Leu Pro Pro Thr Ser Lys Ile Pro Ile
            35   40   45

Asn Ile Asp His Arg Lys Asp Cys Val Val Gly Glu Val Ile Ala Ile
        50   55   60

Ile Glu Asp Ile Arg Gly Pro Phe Phe Leu Gly Ile Val Arg Cys Pro
65   70   75   80

Gln Leu His Ala Val Leu Phe Glu Ala Ala His Ser Asn Phe Phe Gly
                85   90   95

Asn Arg Asp Ser Val Leu Ser Pro Leu Glu Arg Ala Leu Tyr Leu Val
            100   105   110

Thr Asn Tyr Leu Pro Ser Val Ser Leu Ser Ser Lys Arg Leu Ser Pro
            115   120   125

Asn Glu Ile Pro Asp Gly Asn Phe Phe Thr His Val Ala Leu Cys Val
        130   135   140

Val Gly Arg Arg Val Gly Thr Val Val Asn Tyr Asp Cys Thr Pro Glu
145   150   155   160

Ser Ser Ile Glu Pro Phe Arg Val Leu Ser Met Glu Ser Lys Ala Arg
                165   170   175

Leu Leu Ser Leu Val Lys Asp Tyr Ala Gly Leu Asn Lys Val Trp Lys
            180   185   190

Val Ser Glu Asp Lys Leu Ala Lys Val Leu Leu Ser Thr Ala Val Asn
            195   200   205

Asn Met Leu Leu Arg Asp Arg Trp Asp Val Val Ala Lys Arg Arg Arg
    210   215   220

Glu Ala Gly Ile Met Gly His Val Tyr Leu Gln Ala Ser Thr Gly Tyr
225   230   235   240

Gly Leu Ala Arg Ile Thr Asn Val Asn Gly Val Glu Ser Lys Leu Pro
                245   250   255

Asn Ala Gly Val Ile Asn Ala Thr Phe His Pro Gly Gly Pro Ile Tyr
                260   265   270

Asp Leu Ala Leu Gly Val Gly Glu Ser Asn Glu Asp Cys Glu Lys Thr
                275   280   285

Val Pro His Leu Lys Val Thr Gln Leu Cys Arg Asn Asp Ser Asp Met
    290   295   300

Ala Ser Val Ala Gly Asn Ala Ser Asn Ile Ser Pro Gln Pro Pro Ser
305   310   315   320

Gly Val Pro Thr Gly Gly Glu Phe Val Leu Ile Pro Thr Ala Tyr Tyr
                325   330   335

Ser Gln Leu Leu Thr Gly Gln Thr Lys Asn Pro Gln Val Ser Ile Gly
                340   345   350

Ala Pro Asn Asn Gly Gln Tyr Ile Val Gly Pro Tyr Gly Ser Pro His
                355   360   365

Pro Pro Ala Phe Pro Pro Asn Thr Gly Gly Tyr Gly Cys Pro Pro Gly
    370   375   380

His Phe Gly Gly Pro Tyr Gly Phe Pro Gly Tyr Pro Pro Pro Asn Arg
385   390   395   400

Leu Glu Met Gln Met Ser Ala Phe Met Asn Ala Leu Ala Ala Glu Arg
                405   410   415

Gly Ile Asp Leu Gln Thr Pro Cys Val Asn Phe Pro Asp Lys Thr Asp
                420   425   430

Val Arg Arg Pro Gly Lys Arg Asp Phe Lys Ser Met Asp Gln Arg Glu
    435   440   445

Leu Asp Ser Phe Tyr Ser Gly Glu Ser Gln Met Asp Gly Glu Phe Pro
    450   455   460

Ser Asn Ile Tyr Phe Pro Gly Glu Pro Thr Tyr Ile Thr His Arg Arg
465   470   475   480

Arg Arg Val Ser Pro Ser Tyr Trp Gln Arg Arg His Arg Val Ser Asn
                485   490   495

Gly Gln His Glu Glu Leu Ala Gly Val Val Ala Lys Leu Gln Gln Glu
                500   505   510

Val Thr Glu Leu Lys Ser Gln Asn Gly Thr Gln Met Pro Leu Ser His
                515   520   525

His Thr Asn Ile Pro Glu Gly Thr Arg Asp Pro Arg Ile Ser Ile Leu
    530   535   540

Leu Lys Gln Leu Gln Ser Val Ser Gly Leu Cys Ser Ser Gln Asn Thr
545   550   555   560

Thr Ser Thr Pro His Thr Asp Thr Val Gly Gln Asp Val Asn Ala Val
                565   570   575

Glu Ala Ser Ser Lys Ala Pro Leu Ile Gln Gly Ser Thr Ala Asp Asp
                580   585   590

Ala Asp Met Phe Ala Asn Gln Met Met Val Gly Arg Cys
                595   600   605

<210>   64
<211>   1194
<212>   PRT
<213>   Varicella zoster

<400>   64

Met Ala Ile Arg Thr Gly Phe Cys Asn Pro Phe Leu Thr Gln Ala Ser
1   5   10   15

Gly Ile Lys Tyr Asn Pro Arg Thr Gly Arg Gly Ser Asn Arg Glu Phe
                20   25   30

Leu His Ser Tyr Lys Thr Thr Met Ser Ser Phe Gln Phe Leu Ala Pro
                35   40   45

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Lys Cys Leu Asp Glu Asp Val Pro Met Glu Glu Arg Lys Gly Val His
    50                  55                  60

Val Gly Thr Leu Ser Arg Pro Pro Lys Val Tyr Cys Asn Gly Lys Glu
65                  70                  75                  80

Val Pro Ile Leu Asp Phe Arg Cys Ser Ser Pro Trp Pro Arg Arg Val
                85                  90                  95

Asn Ile Trp Gly Glu Ile Asp Phe Arg Gly Asp Lys Phe Asp Pro Arg
                100                 105                 110

Phe Asn Thr Phe His Val Tyr Asp Ile Val Glu Thr Thr Glu Ala Ala
            115                 120                 125

Ser Asn Gly Asp Val Ser Arg Phe Ala Thr Ala Thr Arg Pro Leu Gly
            130                 135                 140

Thr Val Ile Thr Leu Leu Gly Met Ser Arg Cys Gly Lys Arg Val Ala
145                 150                 155                 160

Val His Val Tyr Gly Ile Cys Gln Tyr Phe Tyr Ile Asn Lys Ala Glu
                165                 170                 175

Val Asp Thr Ala Cys Gly Ile Arg Ser Gly Ser Glu Leu Ser Val Leu
            180                 185                 190

Leu Ala Glu Cys Leu Arg Ser Ser Met Ile Thr Gln Asn Asp Ala Thr
            195                 200                 205

Leu Asn Gly Asp Lys Asn Ala Phe His Gly Thr Ser Phe Lys Ser Ala
    210                 215                 220

Ser Pro Glu Ser Phe Arg Val Glu Val Ile Glu Arg Thr Asp Val Tyr
225                 230                 235                 240

Tyr Tyr Asp Thr Gln Pro Cys Ala Phe Tyr Arg Val Tyr Ser Pro Ser
                245                 250                 255

Ser Lys Phe Thr Asn Tyr Leu Cys Asp Asn Phe His Pro Glu Leu Lys
            260                 265                 270

Lys Tyr Glu Gly Arg Val Asp Ala Thr Thr Arg Phe Leu Met Asp Asn
    275                 280                 285
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Pro Gly Phe Val Ser Phe Gly Trp Tyr Gln Leu Lys Pro Gly Val Asp
290   295   300

Gly Glu Arg Val Arg Val Arg Pro Ala Ser Arg Gln Leu Thr Leu Ser
305   310   315   320

Asp Val Glu Ile Asp Cys Met Ser Asp Asn Leu Gln Ala Ile Pro Asn
                325   330   335

Asp Asp Ser Trp Pro Asp Tyr Lys Leu Leu Cys Phe Asp Ile Glu Cys
            340   345   350

Lys Ser Gly Gly Ser Asn Glu Leu Ala Phe Pro Asp Ala Thr His Leu
        355   360   365

Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Ser Ile Pro Arg
    370   375   380

Gln Ser Leu Glu His Ile Leu Leu Phe Ser Leu Gly Ser Cys Asp Leu
385   390   395   400

Pro Gln Arg Tyr Val Gln Glu Met Lys Asp Ala Gly Leu Pro Glu Pro
            405   410   415

Thr Val Leu Glu Phe Asp Ser Glu Phe Glu Leu Leu Ile Ala Phe Met
            420   425   430

Thr Leu Val Lys Gln Tyr Ala Pro Glu Phe Ala Thr Gly Tyr Asn Ile
        435   440   445

Val Asn Phe Asp Trp Ala Phe Ile Met Glu Lys Leu Asn Ser Ile Tyr
    450   455   460

Ser Leu Lys Leu Asp Gly Tyr Gly Ser Ile Asn Arg Gly Gly Leu Phe
465   470   475   480

Lys Ile Trp Asp Val Gly Lys Ser Gly Phe Gln Arg Arg Ser Lys Val
            485   490   495

Lys Ile Asn Gly Leu Ile Ser Leu Asp Met Tyr Ala Ile Ala Thr Glu
        500   505   510

Lys Leu Lys Leu Ser Ser Tyr Lys Leu Asp Ser Val Ala Arg Glu Ala
        515   520   525

Leu Asn Glu Ser Lys Arg Asp Leu Pro Tyr Lys Asp Ile Pro Gly Tyr
530   535   540

Tyr Ala Ser Gly Pro Asn Thr Arg Gly Ile Ile Gly Glu Tyr Cys Ile
545   550   555   560

Gln Asp Ser Ala Leu Val Gly Lys Leu Phe Phe Lys Tyr Leu Pro His
                565   570   575

Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Arg Ile Thr Leu Thr Lys
                580   585   590

Ala Ile Tyr Asp Gly Gln Gln Val Arg Ile Tyr Thr Cys Leu Leu Gly
        595   600   605

Leu Ala Ser Ser Arg Gly Phe Ile Leu Pro Asp Gly Gly Tyr Pro Ala
610   615   620

Thr Phe Glu Tyr Lys Asp Val Ile Pro Asp Val Gly Asp Val Glu Glu
625   630   635   640

Glu Met Asp Glu Asp Glu Ser Val Ser Pro Thr Gly Thr Ser Ser Gly
                645   650   655

Arg Asn Val Gly Tyr Lys Gly Ala Arg Val Phe Asp Pro Asp Thr Gly
                660   665   670

Phe Tyr Ile Asp Pro Val Val Val Leu Asp Phe Ala Ser Leu Tyr Pro
        675   680   685

Ser Ile Ile Gln Ala His Asn Leu Cys Phe Thr Thr Leu Thr Leu Asn
690   695   700

Phe Glu Thr Val Lys Arg Leu Asn Pro Ser Asp Tyr Ala Thr Phe Thr
705   710   715   720

Val Gly Gly Lys Arg Leu Phe Phe Val Arg Ser Asn Val Arg Glu Ser
                725   730   735

Leu Leu Gly Val Leu Leu Lys Asp Trp Leu Ala Met Arg Lys Ala Ile
                740   745   750

Arg Ala Arg Ile Pro Gly Ser Ser Ser Asp Glu Ala Val Leu Leu Asp
                755   760   765

Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser Val Tyr Gly Phe
    770   775   780

Thr Gly Val Ala Gln Gly Phe Leu Pro Cys Leu Tyr Val Ala Ala Thr
785   790   795   800

Val Thr Thr Ile Gly Arg Gln Met Leu Leu Ser Thr Arg Asp Tyr Ile
                805   810   815

His Asn Asn Trp Ala Ala Phe Glu Arg Phe Ile Thr Ala Phe Pro Asp
                820   825   830

Ile Glu Ser Ser Val Leu Ser Gln Lys Ala Tyr Glu Val Lys Val Ile
                835   840   845

Tyr Gly Asp Thr Asp Ser Val Phe Ile Arg Phe Lys Gly Val Ser Val
    850   855   860

Glu Gly Ile Ala Lys Ile Gly Glu Lys Met Ala His Ile Ile Ser Thr
865   870   875   880

Ala Leu Phe Cys Pro Pro Ile Lys Leu Glu Cys Glu Lys Thr Phe Ile
                885   890   895

Lys Leu Leu Leu Ile Thr Lys Lys Lys Tyr Ile Gly Val Ile Tyr Gly
                900   905   910

Gly Lys Val Leu Met Lys Gly Val Asp Leu Val Arg Lys Asn Asn Cys
                915   920   925

Gln Phe Ile Asn Asp Tyr Ala Arg Lys Leu Val Glu Leu Leu Leu Tyr
    930   935   940

Asp Asp Thr Val Ser Arg Ala Ala Ala Glu Ala Ser Cys Val Ser Ile
945   950   955   960

Ala Glu Trp Asn Arg Arg Ala Met Pro Ser Gly Met Ala Gly Phe Gly
                965   970   975

Arg Ile Ile Ala Asp Ala His Arg Gln Ile Thr Ser Pro Lys Leu Asp
                980   985   990

Ile Asn Lys Phe Val Met Thr Ala Glu Leu Ser Arg Pro Pro Ser Ala
                995   1000   1005

Tyr Ile Asn Arg Arg Leu Ala His Leu Thr Val Tyr Tyr Lys Leu
    1010   1015   1020

Val Met Arg Gln Gly Gln Ile Pro Asn Val Arg Glu Arg Ile Pro
    1025   1030   1035

Tyr Val Ile Val Ala Pro Thr Asp Glu Val Glu Ala Asp Ala Lys
    1040   1045   1050

Ser Val Ala Leu Leu Arg Gly Asp Pro Leu Gln Asn Thr Ala Gly
    1055   1060   1065

Lys Arg Cys Gly Glu Ala Lys Arg Lys Leu Ile Ile Ser Asp Leu
    1070   1075   1080

Ala Glu Asp Pro Ile His Val Thr Ser His Gly Leu Ser Leu Asn
    1085   1090   1095

Ile Asp Tyr Tyr Phe Ser His Leu Ile Gly Thr Ala Ser Val Thr
    1100   1105   1110

Phe Lys Ala Leu Phe Gly Asn Asp Thr Lys Leu Thr Glu Arg Leu
    1115   1120   1125

Leu Lys Arg Phe Ile Pro Glu Thr Arg Val Val Asn Val Lys Met
    1130   1135   1140

Leu Asn Arg Leu Gln Ala Ala Gly Phe Val Cys Ile His Ala Pro
    1145   1150   1155

Cys Trp Asp Asn Lys Met Asn Thr Glu Ala Glu Ile Thr Glu Glu
    1160   1165   1170

Glu Gln Ser His Gln Ile Met Arg Arg Val Phe Cys Ile Pro Lys
    1175   1180   1185

Ala Ile Leu His Gln Ser
    1190

<210> 65
<211> 156
<212> PRT
<213> Varicella zoster

<400> 65

Met Tyr Glu Ser Glu Asn Ala Ser Glu His His Pro Glu Leu Glu Asp
1   5   10   15

Val Phe Ser Glu Asn Thr Gly Asp Ser Asn Pro Ser Met Gly Ser Ser
            20   25   30

Asp Ser Thr Arg Ser Ile Ser Gly Met Arg Ala Arg Asp Leu Ile Thr
        35   40   45

Asp Thr Asp Val Asn Leu Leu Asn Ile Asp Ala Leu Glu Ser Lys Tyr
    50   55   60

Phe Pro Ala Asp Ser Thr Phe Thr Leu Ser Val Trp Phe Glu Asn Leu
65   70   75   80

Ile Pro Pro Glu Ile Glu Ala Ile Leu Pro Thr Thr Asp Ala Gln Leu
                85   90   95

Asn Tyr Ile Ser Phe Thr Ser Arg Leu Ala Ser Val Leu Lys His Lys
            100   105   110

Glu Ser Asn Asp Ser Glu Lys Ser Ala Tyr Val Val Pro Cys Glu His
        115   120   125

Ser Ala Ser Val Thr Arg Arg Arg Glu Arg Phe Ala Gly Val Met Ala
    130   135   140

Lys Phe Leu Asp Leu His Glu Ile Leu Lys Asp Ala
145   150   155

<210> 66
<211> 269
<212> PRT
<213> Varicella zoster

<400> 66

Met Ser Arg Arg Thr Tyr Val Arg Ser Glu Arg Arg Arg Gly Cys Gly
1   5   10   15

Asp Asn Leu Leu Gln Arg Ile Arg Leu Val Val Pro Ser Ala Leu Gln
            20   25   30

Cys Cys Asp Gly Asp Leu Pro Ile Phe Asp Pro Gln Arg Pro Pro Ala
        35   40   45

Arg Cys Val Phe Gln Phe Asn Gly Glu Asp Asn Val Ser Glu Ala Phe

Pro Val Glu Tyr Ile Met Arg Leu Met Ala Asn Trp Ala Gln Val Asp
65   70   75   80

Cys Asp Pro Tyr Ile Lys Ile Gln Asn Thr Gly Val Ser Val Leu Phe
                  85   90   95

Gln Gly Phe Phe Phe Arg Pro Thr Asn Ala Pro Val Ala Glu Val Ser
              100   105   110

Ile Asp Ser Asn Asn Val Ile Leu Ser Ser Thr Leu Ser Thr Gly Ile
          115   120   125

Asn Leu Ser Ala Leu Glu Ser Ile Lys Arg Gly Gly Gly Ile Asp Arg
    130   135   140

Arg Pro Leu Gln Ala Leu Met Trp Val Asn Cys Phe Val Arg Met Pro
145   150   155   160

Tyr Val Gln Leu Ser Phe Arg Phe Met Gly Pro Glu Asp Pro Ser Arg
              165   170   175

Thr Ile Lys Leu Met Ala Arg Ala Thr Asp Ala Tyr Met Tyr Lys Glu
          180   185   190

Thr Gly Asn Asn Leu Asp Glu Tyr Ile Arg Trp Arg Pro Ser Phe Arg
          195   200   205

Ser Pro Pro Glu Asn Gly Ser Pro Asn Thr Ser Val Gln Met Gln Ser
    210   215   220

Asp Ile Lys Pro Ala Leu Pro Asp Thr Gln Thr Thr Arg Val Trp Lys
225   230   235   240

Leu Ala Leu Pro Val Ala Asn Val Thr Tyr Ala Leu Phe Ile Val Ile
              245   250   255

Val Leu Val Val Val Leu Gly Ala Val Leu Phe Trp Lys
              260   265

<210>   67
<211>   235
<212>   PRT
<213>   Varicella zoster

<400> 67

Met Thr Gln Pro Ala Ser Ser Arg Val Val Phe Asp Pro Ser Asn Pro
1   5   10   15

Thr Thr Phe Ser Val Glu Ala Ile Ala Ala Tyr Thr Pro Val Ala Leu
            20   25   30

Ile Arg Leu Leu Asn Ala Ser Gly Pro Leu Gln Pro Gly His Arg Val
            35   40   45

Asp Ile Ala Asp Ala Arg Ser Ile Tyr Thr Val Gly Ala Ala Ala Ser
    50   55   60

Ala Ala Arg Ala Arg Ala Asn His Asn Ala Asn Thr Ile Arg Arg Thr
65   70   75   80

Ala Met Phe Ala Glu Thr Asp Pro Met Thr Trp Leu Arg Pro Thr Val
                85   90   95

Gly Leu Lys Arg Thr Phe Asn Pro Arg Ile Ile Arg Pro Gln Pro Pro
            100   105   110

Asn Pro Ser Met Ser Leu Gly Ile Ser Gly Pro Thr Ile Leu Pro Gln
            115   120   125

Lys Thr Gln Ser Ala Asp Gln Ser Ala Leu Gln Gln Pro Ala Ala Leu
    130   135   140

Ala Phe Ser Gly Ser Ser Pro Gln His Pro Pro Pro Gln Thr Thr Ser
145   150   155   160

Ala Ser Val Gly Gln Gln Gln His Val Val Ser Gly Ser Ser Gly Gln
                165   170   175

Gln Pro Gln Gln Gly Ala Gln Ser Ser Thr Val Gln Pro Thr Thr Gly
            180   185   190

Ser Pro Pro Ala Ala Gln Gly Val Pro Gln Ser Thr Pro Pro Pro Thr
        195   200   205

Gln Asn Thr Pro Gln Gly Gly Lys Gly Gln Thr Leu Ser His Thr Gly
    210   215   220

Gln Ser Gly Asn Ala Ser Arg Ser Arg Arg Val
225   230   235

<210> 68
<211> 483
<212> PRT
<213> Varicella zoster

<400> 68

Met Gly Ser Gln Pro Thr Asn Ser His Phe Thr Leu Asn Glu Gln Thr
1   5   10   15

Leu Cys Gly Thr Asn Ile Ser Leu Leu Gly Asn Asn Arg Phe Ile Gln
            20   25   30

Ile Gly Asn Gly Leu His Met Thr Tyr Ala Pro Gly Phe Phe Gly Asn
            35   40   45

Trp Ser Arg Asp Leu Thr Ile Gly Pro Arg Phe Gly Gly Leu Asn Lys
        50   55   60

Gln Pro Ile His Val Pro Pro Lys Arg Thr Glu Thr Ala Ser Ile Gln
65   70   75   80

Val Thr Pro Arg Ser Ile Val Ile Asn Arg Met Asn Asn Ile Gln Ile
                85   90   95

Asn Pro Thr Ser Ile Gly Asn Pro Gln Val Thr Ile Arg Leu Pro Leu
                100   105   110

Asn Asn Phe Lys Ser Thr Thr Gln Leu Ile Gln Gln Val Ser Leu Thr
                115   120   125

Asp Phe Phe Arg Pro Asp Ile Glu His Ala Gly Ser Ile Val Leu Ile
        130   135   140

Leu Arg His Pro Ser Asp Met Ile Gly Glu Ala Asn Thr Leu Thr Gln
145   150   155   160

Ala Gly Arg Asp Pro Asp Val Leu Leu Glu Gly Leu Arg Asn Leu Phe
                165   170   175

Asn Ala Cys Thr Ala Pro Trp Thr Val Gly Glu Gly Gly Gly Leu Arg
                180   185   190

Ala Tyr Val Thr Ser Leu Ser Phe Ile Ala Ala Cys Arg Ala Glu Glu
                195   200   205

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Tyr Thr Asp Lys Gln Ala Ala Asp Ala Asn Arg Thr Ala Ile Val Ser
210             215                 220

Ala Tyr Gly Cys Ser Arg Met Glu Thr Arg Leu Ile Arg Phe Ser Glu
225             230                 235                 240

Cys Leu Arg Ala Met Val Gln Cys His Val Phe Pro His Arg Phe Ile
                245                 250                 255

Ser Phe Phe Gly Ser Leu Leu Glu Tyr Thr Ile Gln Asp Asn Leu Cys
                260                 265                 270

Asn Ile Thr Ala Val Ala Lys Gly Pro Gln Glu Ala Ala Arg Thr Asp
            275                 280                 285

Lys Thr Ser Thr Arg Arg Val Thr Ala Asn Ile Pro Ala Cys Val Phe
    290                 295                 300

Trp Asp Val Asp Lys Asp Leu His Leu Ser Ala Asp Gly Leu Lys His
305             310                 315                 320

Val Phe Leu Val Phe Val Tyr Thr Gln Arg Arg Gln Arg Glu Gly Val
                325                 330                 335

Arg Leu His Leu Ala Leu Ser Gln Leu Asn Glu Gln Cys Phe Gly Arg
            340                 345                 350

Gly Ile Gly Phe Leu Leu Gly Arg Ile Arg Ala Glu Asn Ala Ala Trp
            355                 360                 365

Gly Thr Glu Gly Val Ala Asn Thr His Gln Pro Tyr Asn Thr Arg Ala
    370                 375                 380

Leu Pro Leu Val Gln Leu Ser Asn Asp Pro Thr Ser Pro Arg Cys Ser
385                 390                 395                 400

Ile Gly Glu Ile Thr Gly Val Asn Trp Asn Leu Ala Arg Gln Arg Leu
                405                 410                 415

Tyr Gln Trp Thr Gly Asp Phe Arg Gly Leu Pro Thr Gln Leu Ser Cys
            420                 425                 430

Met Tyr Ala Ala Tyr Thr Leu Ile Gly Thr Ile Pro Ser Glu Ser Val
    435                 440                 445
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Arg Tyr Thr Arg Arg Met Glu Arg Phe Gly Gly Tyr Asn Val Pro Thr
    450   455   460

Ile Trp Leu Glu Gly Val Val Trp Gly Gly Thr Asn Thr Trp Asn Glu
465   470   475   480

Cys Tyr Tyr

<210> 69
<211> 775
<212> PRT
<213> Varicella zoster

<400> 69

Met Glu Phe Lys Arg Ile Phe Asn Thr Val His Asp Ile Ile Asn Arg
1   5   10   15

Leu Cys Gln His Gly Tyr Lys Glu Tyr Ile Ile Pro Pro Glu Ser Thr
            20   25   30

Thr Pro Val Glu Leu Met Glu Tyr Ile Ser Thr Ile Val Ser Lys Leu
            35   40   45

Lys Ala Val Thr Arg Gln Asp Glu Arg Val Tyr Arg Cys Cys Gly Glu
        50   55   60

Leu Ile His Cys Arg Ile Asn Leu Arg Ser Val Ser Met Glu Thr Trp
65   70   75   80

Leu Thr Ser Pro Ile Leu Cys Leu Thr Pro Arg Val Arg Gln Ala Ile
                85   90   95

Glu Gly Arg Arg Asp Glu Ile Arg Arg Ala Ile Leu Glu Pro Phe Leu
            100   105   110

Lys Asp Gln Tyr Pro Ala Leu Ala Thr Leu Gly Leu Gln Ser Ala Leu
        115   120   125

Lys Tyr Glu Asp Phe Tyr Leu Thr Lys Leu Glu Glu Gly Lys Leu Glu
        130   135   140

Ser Leu Cys Gln Phe Phe Leu Arg Leu Ala Ala Thr Val Thr Thr Glu
145   150   155   160

Ile Val Asn Leu Pro Lys Ile Ala Thr Leu Ile Pro Gly Ile Asn Asp
                    165   170   175

Gly Tyr Thr Trp Thr Asp Val Cys Arg Val Phe Phe Thr Ala Leu Ala
            180   185   190

Cys Gln Lys Ile Val Pro Ala Thr Pro Val Met Met Phe Leu Gly Arg
            195   200   205

Glu Thr Gly Ala Thr Ala Ser Cys Tyr Leu Met Asp Pro Glu Ser Ile
    210   215   220

Thr Val Gly Arg Ala Val Arg Ala Ile Thr Gly Asp Val Gly Thr Val
225   230   235   240

Leu Gln Ser Arg Gly Gly Val Gly Ile Ser Leu Gln Ser Leu Asn Leu
                245   250   255

Ile Pro Thr Glu Asn Gln Thr Lys Gly Leu Leu Ala Val Leu Lys Leu
            260   265   270

Leu Asp Cys Met Val Met Ala Ile Asn Ser Asp Cys Glu Arg Pro Thr
            275   280   285

Gly Val Cys Val Tyr Ile Glu Pro Trp His Val Asp Leu Gln Thr Val
    290   295   300

Leu Ala Thr Arg Gly Met Leu Val Arg Asp Glu Ile Phe Arg Cys Asp
305   310   315   320

Asn Ile Phe Cys Cys Leu Trp Thr Pro Asp Leu Phe Phe Glu Arg Tyr
            325   330   335

Leu Ser Tyr Leu Lys Gly Ala Ser Asn Val Gln Trp Thr Leu Phe Asp
            340   345   350

Asn Arg Ala Asp Ile Leu Arg Thr Leu His Gly Glu Ala Phe Thr Ser
            355   360   365

Thr Tyr Leu Arg Leu Glu Arg Glu Gly Leu Gly Val Ser Ser Val Pro
    370   375   380

Ile Gln Asp Ile Ala Phe Thr Ile Ile Arg Ser Ala Ala Val Thr Gly
385   390   395   400

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Ser Pro Phe Leu Met Phe Lys Asp Ala Cys Asn Arg Asn Tyr His Met
            405                 410                 415

Asn Thr Gln Gly Asn Ala Ile Thr Gly Ser Asn Leu Cys Thr Glu Ile
            420                 425                 430

Val Gln Lys Ala Asp Ala His Gln His Gly Val Cys Asn Leu Ala Ser
            435                 440                 445

Ile Asn Leu Thr Thr Cys Leu Ser Lys Gly Pro Val Ser Phe Asn Leu
            450                 455                 460

Asn Asp Leu Gln Leu Thr Ala Arg Thr Thr Val Ile Phe Leu Asn Gly
465                 470                 475                 480

Val Leu Ala Ala Gly Asn Phe Pro Cys Lys Lys Ser Cys Lys Gly Val
                485                 490                 495

Lys Asn Asn Arg Ser Leu Gly Ile Gly Ile Gln Gly Leu His Thr Thr
            500                 505                 510

Cys Leu Arg Leu Gly Phe Asp Leu Thr Ser Gln Pro Ala Arg Arg Leu
            515                 520                 525

Asn Val Gln Ile Ala Glu Leu Met Leu Tyr Glu Thr Met Lys Thr Ser
            530                 535                 540

Met Glu Met Cys Lys Ile Gly Gly Leu Ala Pro Phe Lys Gly Phe Thr
545                 550                 555                 560

Glu Ser Lys Tyr Ala Lys Gly Trp Leu His Gln Asp Gly Phe Ser Thr
            565                 570                 575

Ile Ser Tyr Leu Asp Leu Pro Trp Cys Thr Leu Arg Asp Asp Ile Cys
            580                 585                 590

Ala Tyr Gly Leu Tyr Asn Ser Gln Phe Leu Ala Leu Met Pro Thr Val
            595                 600                 605

Ser Ser Ala Gln Val Thr Glu Cys Ser Glu Gly Phe Ser Pro Ile Tyr
            610                 615                 620

Asn Asn Met Phe Ser Lys Val Thr Thr Ser Gly Glu Leu Leu Arg Pro
625                 630                 635                 640
```

Asn Leu Asp Leu Met Asp Glu Leu Arg Asp Met Tyr Ser Cys Glu Glu
              645   650   655

Lys Arg Leu Glu Val Ile Asn Ile Leu Glu Lys Asn Gln Trp Ser Val
              660   665   670

Ile Arg Ser Phe Gly Cys Leu Ser Asn Ser His Pro Leu Leu Lys Tyr
              675   680   685

Lys Thr Ala Phe Glu Tyr Glu Gln Glu Asp Leu Val Asp Met Cys Ala
              690   695   700

Glu Arg Ala Pro Phe Ile Asp Gln Ser Gln Ser Met Thr Leu Phe Ile
705   710   715   720

Glu Glu Arg Pro Asp Gly Thr Ile Pro Ala Ser Lys Ile Met Asn Leu
                        725   730   735

Leu Ile Arg Ala Tyr Lys Ala Gly Leu Lys Thr Gly Met Tyr Tyr Cys
                        740   745   750

Lys Ile Arg Lys Ala Thr Asn Ser Gly Leu Phe Ala Gly Gly Glu Leu
              755   760   765

Thr Cys Thr Ser Cys Ala Leu
              770   775

<210> 70
<211> 306
<212> PRT
<213> Varicella zoster

<400> 70

Met Asp Gln Lys Asp Cys Ser His Phe Phe Tyr Arg Pro Glu Cys Pro
1   5   10   15

Asp Ile Asn Asn Leu Arg Ala Leu Ser Ile Ser Asn Arg Trp Leu Glu
              20   25   30

Ser Asp Phe Ile Ile Glu Asp Asp Tyr Gln Tyr Leu Asp Cys Leu Thr
              35   40   45

Glu Asp Glu Leu Ile Phe Tyr Arg Phe Ile Phe Thr Phe Leu Ser Ala
              50   55   60

Ala Asp Asp Leu Val Asn Val Asn Leu Gly Ser Leu Thr Gln Leu Phe

Ser Gln Lys Asp Ile His His Tyr Tyr Ile Glu Gln Glu Cys Ile Glu
                85   90   95

Val Val His Ala Arg Val Tyr Ser Gln Ile Gln Leu Met Leu Phe Arg
                100   105   110

Gly Asp Glu Ser Leu Arg Val Gln Tyr Val Asn Val Thr Ile Asn Asn
                115   120   125

Pro Ser Ile Gln Gln Lys Val Gln Trp Leu Glu Glu Lys Val Arg Asp
        130   135   140

Asn Pro Ser Val Ala Glu Lys Tyr Ile Leu Met Ile Leu Ile Glu Gly
145   150   155   160

Ile Phe Phe Val Ser Ser Phe Ala Ala Ile Ala Tyr Leu Arg Asn Asn
                165   170   175

Gly Leu Phe Val Val Thr Cys Gln Phe Asn Asp Leu Ile Ser Arg Asp
                180   185   190

Glu Ala Ile His Thr Ser Ala Ser Cys Cys Ile Tyr Asn Asn Tyr Val
                195   200   205

Pro Glu Lys Pro Ala Ile Thr Arg Ile His Gln Leu Phe Ser Glu Ala
        210   215   220

Val Glu Ile Glu Cys Ala Phe Leu Lys Ser His Ala Pro Lys Thr Arg
225   230   235   240

Leu Val Asn Val Asp Ala Ile Thr Gln Tyr Val Lys Phe Ser Ala Asp
                245   250   255

Arg Leu Leu Ser Ala Ile Asn Val Pro Lys Leu Phe Asn Thr Pro Pro
                260   265   270

Pro Asp Ser Asp Phe Pro Leu Ala Phe Met Ile Ala Asp Lys Asn Thr
                275   280   285

Asn Phe Phe Glu Arg His Ser Thr Ser Tyr Ala Gly Thr Val Ile Asn
        290   295   300

Asp Leu

<210> 71
<211> 408
<212> PRT
<213> Varicella zoster

<400> 71

Met Asp Leu Arg Ser Arg Thr Asp Asp Ala Leu Asp Met Glu Leu His
1   5   10   15

Ala Gly Phe Asp Ala Pro Glu Ile Ala Arg Ala Val Leu Thr Glu Lys
                20   25   30

Thr Leu Thr Gly Leu Ile Ser Ser Ile Ser Pro Leu Val Asn Arg Leu
            35   40   45

Arg Asp Ser Ile Leu Ile Phe Ser Asp Glu Gly Leu Ile Ile His Cys
    50   55   60

Ser Leu Glu Thr Glu Gln Leu Tyr Ile Pro Ile Pro Ala Asn Met Phe
65   70   75   80

Asp Gln Tyr Asn Trp Thr Gly Pro Arg Met Val Val Leu Ala Ala Thr
                85   90   95

Glu Gly Arg Ser Ser Leu Ile Asp Ala Phe Arg His Thr Lys Asp Pro
                100   105   110

Ser Thr Pro Thr Arg Leu Tyr Phe Lys Phe Thr Gly Gln Pro Pro Glu
            115   120   125

Arg Ser Ile Ile Gln Thr Met Val Trp Gln Arg Pro Gly Asp Cys Gly
    130   135   140

Pro Asp Asp Gln Val Gln Cys Tyr Lys Gln Val Val Lys Arg Glu Leu
145   150   155   160

Ala Cys Tyr Thr Met Met Phe Pro Asn Leu Thr Pro Asp Ile Ser Ile
                165   170   175

Cys Leu Lys Arg Asp Gln Phe Thr Arg Leu Gln Arg Leu Leu Lys Thr
            180   185   190

Phe Gly Phe Thr Thr Cys Phe Ile Leu Thr Ala Thr Asp Met Tyr Ile
            195   200   205

Gln Thr Ala Gly Gly Gly Phe Ile Ser Phe Asn Val Ser Leu Asp Ile
210   215   220

Asn Gly Ser Lys Pro Thr Pro Tyr Asn Leu Ile Arg Ser Ile Thr Asn
225   230   235   240

Ser Lys Arg Ile Leu Asn Asn Val Val Tyr Gly Ser Gly Ser Met Arg
                245   250   255

Glu Phe Gly Val Leu Leu Glu Thr His Ser Gly Phe Arg Ser Ala Val
                260   265   270

Gln Asn Leu Lys Leu Thr Arg Asp Glu Thr Cys Tyr Ile Asn Phe Tyr
                275   280   285

Leu Ala Leu Thr Asn Ser Pro Met Val Gly Leu Tyr Ile Gln Arg Ser
                290   295   300

Ala Pro Val His Ser Phe Phe Tyr Ala Thr Phe Leu Ser Pro Lys Asp
305   310   315   320

Leu Lys Glu Lys Leu Thr Ser Met Gln Leu Phe Ala Asn Met Glu Ser
                325   330   335

Val Lys Asp Glu Pro Pro Leu Lys Lys Arg Arg Asn Leu Leu Thr Lys
                340   345   350

Arg Asn Glu Lys Asn Thr Gly Asn Lys Met Gly Gly Lys Leu Pro Glu
                355   360   365

Thr Thr Trp Gln Glu Gly Ile Gly Ile Arg Glu Tyr Cys Val Ala Pro
370   375   380

Pro Val Asp Pro Ala Gly Thr Leu Asp Tyr Ser Glu Leu Ser Arg Glu
385   390   395   400

Ser Asp Val Ile Cys Thr Val Lys
                405

<210> 72
<211> 406
<212> PRT
<213> Varicella zoster

<400> 72

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Met Ala Val Asn Gly Glu Arg Ala Val His Asp Glu Asn Leu Gly Val
1               5                   10                  15

Leu Asp Arg Glu Leu Ile Arg Ala Gln Ser Ile Gln Gly Cys Val Gly
            20                  25                  30

Asn Pro Gln Glu Cys Asn Ser Cys Ala Ile Thr Ser Ala Ser Arg Leu
        35                  40                  45

Phe Leu Val Gly Leu Gln Ala Ser Val Ile Thr Ser Gly Leu Ile Leu
    50                  55                  60

Gln Tyr His Val Cys Glu Ala Ala Val Asn Ala Thr Ile Met Gly Leu
65                  70                  75                  80

Ile Val Val Ser Gly Leu Trp Pro Thr Ser Val Lys Phe Leu Arg Thr
            85                  90                  95

Leu Ala Lys Leu Gly Arg Cys Leu Gln Thr Val Val Val Leu Gly Phe
            100                 105                 110

Ala Val Leu Trp Ala Val Gly Cys Pro Ile Ser Arg Asp Leu Pro Phe
        115                 120                 125

Val Glu Leu Leu Gly Ile Ser Ile Ser Ala Ile Thr Gly Thr Val Ala
    130                 135                 140

Ala Val His Ile His Tyr Tyr Asn Phe Val Thr Thr Phe Asn Gly Pro
145                 150                 155                 160

His Ile Tyr Phe Tyr Val Met Met Leu Gly Thr Gly Leu Gly Gly Leu
            165                 170                 175

Leu Thr Val Ile Leu Tyr Met Tyr Val Ser Lys Tyr Glu Val Leu Ile
            180                 185                 190

Gly Leu Cys Ile Ser Ile Val Thr Leu Val Ser Ile Val Asp Ala Ala
        195                 200                 205

Thr Asp Leu Gln Asp Thr Cys Ile Tyr Arg Lys Asn Arg His Lys Gln
    210                 215                 220

Leu Asn Thr Tyr Thr Asp Leu Gly Phe Ala Val Val Tyr Thr Gln Asn
225                 230                 235                 240
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Asp Arg Gly Arg Val Cys Asp His Arg Glu Ser Ser Arg Thr Leu Lys
            245   250   255

Arg Val Phe Lys Gly Ile Arg Ile Met Ser Val Ile Pro Pro Val Leu
            260   265   270

Tyr Ile Val Thr Pro Leu Met Trp Ala Ile Ser His Ile Ile Lys Leu
            275   280   285

Asn His Phe Ile Lys Leu Thr Gln Val Thr Leu Ala Val Ser Ile Gly
    290   295   300

Gly His Ile Ile Ala Phe Gly Leu Gln Gly Phe Ala Val Leu Tyr Gln
305   310   315   320

Glu Lys Lys Asn Leu Trp Val Ile Val Leu Tyr Thr Thr Thr Ser Val
            325   330   335

Thr Gly Ile Ala Val Thr Phe Ala Gly Ile Ser Trp Gly Ala Ile Ile
            340   345   350

Ile Leu Thr Ser Thr Val Ala Ala Gly Leu Thr Cys Ile Gln Met Met
            355   360   365

Arg Leu Ser Val Lys Pro Ile Asp Cys Phe Met Ala Ser His Ile Thr
    370   375   380

Lys Val Tyr His Val Cys Val Tyr Ile Ile Ile Asn Leu Cys Tyr Leu
385   390   395   400

Cys Gly Thr Tyr Val Ser
            405

<210>   73
<211>   560
<212>   PRT
<213>   Varicella zoster

<400>   73

Met Lys Arg Ile Gln Ile Asn Leu Ile Leu Thr Ile Ala Cys Ile Gln
1   5   10   15

Leu Ser Thr Glu Ser Gln Pro Thr Pro Val Ser Ile Thr Glu Leu Tyr
            20   25   30

```
Thr Ser Ala Ala Thr Arg Lys Pro Asp Pro Ala Val Ala Pro Thr Ser
    35                  40                  45

Ala Ala Ser Arg Lys Pro Asp Pro Ala Val Ala Pro Thr Ser Ala Ala
    50                  55                  60

Ser Arg Lys Pro Asp Pro Ala Val Ala Pro Thr Ser Ala Ala Ser Arg
65                  70                  75                  80

Lys Pro Asp Pro Ala Val Ala Pro Thr Ser Ala Ala Thr Arg Lys Pro
                85                  90                  95

Asp Pro Ala Val Ala Pro Thr Ser Ala Ala Ser Arg Lys Pro Asp Pro
            100                 105                 110

Ala Val Ala Pro Thr Ser Ala Ala Thr Arg Lys Pro Asp Pro Ala Val
            115                 120                 125

Ala Pro Thr Ser Ala Ala Ser Arg Lys Pro Asp Pro Ala Ala Asn Thr
    130                 135                 140

Gln His Ser Gln Pro Pro Phe Leu Tyr Glu Asn Ile Gln Cys Val His
145                 150                 155                 160

Gly Gly Ile Gln Ser Ile Pro Tyr Phe His Thr Phe Ile Met Pro Cys
                165                 170                 175

Tyr Met Arg Leu Thr Thr Gly Gln Gln Ala Ala Phe Lys Gln Gln Gln
            180                 185                 190

Lys Thr Tyr Glu Gln Tyr Ser Leu Asp Pro Glu Gly Ser Asn Ile Thr
            195                 200                 205

Arg Trp Lys Ser Leu Ile Arg Pro Asp Leu His Ile Glu Val Trp Phe
    210                 215                 220

Thr Arg His Leu Ile Asp Pro His Arg Gln Leu Gly Asn Ala Leu Ile
225                 230                 235                 240

Arg Met Pro Asp Leu Pro Val Met Leu Tyr Ser Asn Ser Ala Asp Leu
                245                 250                 255

Asn Leu Ile Asn Asn Pro Glu Ile Phe Thr His Ala Lys Glu Asn Tyr
                260                 265                 270
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Val Ile Pro Asp Val Lys Thr Thr Ser Asp Phe Ser Val Thr Ile Leu
        275                 280                 285

Ser Met Asp Ala Thr Thr Glu Gly Thr Tyr Ile Trp Arg Val Val Asn
        290                 295                 300

Thr Lys Thr Lys Asn Val Ile Ser Glu His Ser Ile Thr Val Thr Thr
305                 310                 315                 320

Tyr Tyr Arg Pro Asn Ile Thr Val Val Gly Asp Pro Val Leu Thr Gly
                325                 330                 335

Gln Thr Tyr Ala Ala Tyr Cys Asn Val Ser Lys Tyr Tyr Pro Pro His
        340                 345                 350

Ser Val Arg Val Arg Trp Thr Ser Arg Phe Gly Asn Ile Gly Lys Asn
        355                 360                 365

Phe Ile Thr Asp Ala Ile Gln Glu Tyr Ala Asn Gly Leu Phe Ser Tyr
        370                 375                 380

Val Ser Ala Val Arg Ile Pro Gln Gln Lys Gln Met Asp Tyr Pro Pro
385                 390                 395                 400

Pro Ala Ile Gln Cys Asn Val Leu Trp Ile Arg Asp Gly Val Ser Asn
                405                 410                 415

Met Lys Tyr Ser Ala Val Val Thr Pro Asp Val Tyr Pro Phe Pro Asn
                420                 425                 430

Val Ser Ile Gly Ile Ile Asp Gly His Ile Val Cys Thr Ala Lys Cys
                435                 440                 445

Val Pro Arg Gly Val Val His Phe Val Trp Trp Val Asn Asp Ser Pro
        450                 455                 460

Ile Asn His Glu Asn Ser Glu Ile Thr Gly Val Cys Asp Gln Asn Lys
465                 470                 475                 480

Arg Phe Val Asn Met Gln Ser Ser Cys Pro Thr Ser Glu Leu Asp Gly
                485                 490                 495

Pro Ile Thr Tyr Ser Cys His Leu Asp Gly Tyr Pro Lys Lys Phe Pro
        500                 505                 510
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Pro Phe Ser Ala Val Tyr Thr Tyr Asp Ala Ser Thr Tyr Ala Thr Thr
    515   520   525

Phe Ser Val Val Ala Val Ile Ile Gly Val Ile Ser Ile Leu Gly Thr
    530   535   540

Leu Gly Leu Ile Ala Val Ile Ala Thr Leu Cys Ile Arg Cys Cys Ser
545   550   555   560

<210> 74
<211> 396
<212> PRT
<213> Varicella zoster

<400> 74

Met Asn Glu Ala Val Ile Asp Pro Ile Leu Glu Thr Ala Val Asn Thr
1   5   10   15

Gly Asp Met Phe Cys Ser Gln Thr Ile Pro Asn Arg Cys Leu Lys Asp
            20   25   30

Thr Ile Leu Ile Glu Val Gln Pro Glu Cys Ala Asp Thr Leu Gln Cys
        35   40   45

Val Leu Asp Asp Lys Val Ser Arg His Gln Pro Leu Leu Leu Arg Asn
    50   55   60

His Lys Lys Leu Glu Leu Pro Ser Glu Lys Ser Val Thr Arg Gly Gly
65   70   75   80

Phe Tyr Met Gln Gln Leu Glu Leu Leu Val Lys Ser Ala Pro Pro Asn
                85   90   95

Glu Tyr Ala Leu Leu Leu Ile Gln Cys Lys Asp Thr Ala Leu Ala Asp
            100   105   110

Glu Asp Asn Phe Phe Val Ala Asn Gly Val Ile Asp Ala Gly Tyr Arg
            115   120   125

Gly Val Ile Ser Ala Leu Leu Tyr Tyr Arg Pro Gly Val Thr Val Ile
    130   135   140

Leu Pro Gly His Leu Thr Ile Tyr Leu Phe Pro Val Lys Leu Arg Gln
145   150   155   160

Ser Arg Leu Leu Pro Lys Asn Val Leu Lys His Leu Asp Pro Ile Phe

165   170   175

Lys Ser Ile Gln Val Gln Pro Leu Ser Asn Ser Pro Ser Asn Tyr Glu
            180   185   190

Lys Pro Val Ile Pro Glu Phe Ala Asp Ile Ser Thr Val Gln Gln Gly
            195   200   205

Gln Pro Leu His Arg Asp Ser Ala Glu Tyr His Ile Asp Val Pro Leu
            210   215   220

Thr Tyr Lys His Ile Ile Asn Pro Lys Arg Gln Glu Asp Ala Gly Tyr
225   230   235   240

Asp Ile Cys Val Pro Tyr Asn Leu Tyr Leu Lys Arg Asn Glu Phe Ile
                245   250   255

Lys Ile Val Leu Pro Ile Ile Arg Asp Trp Asp Leu Gln His Pro Ser
            260   265   270

Ile Asn Ala Tyr Ile Phe Gly Arg Ser Ser Lys Ser Arg Ser Gly Ile
            275   280   285

Ile Val Cys Pro Thr Ala Trp Pro Ala Gly Glu His Cys Lys Phe Tyr
            290   295   300

Val Tyr Asn Leu Thr Gly Asp Asp Ile Arg Ile Lys Thr Gly Asp Arg
305   310   315   320

Leu Ala Gln Val Leu Leu Ile Asp His Asn Thr Gln Ile His Leu Lys
            325   330   335

His Asn Val Leu Ser Asn Ile Ala Phe Pro Tyr Ala Ile Arg Gly Lys
            340   345   350

Cys Gly Ile Pro Gly Val Gln Trp Tyr Phe Thr Lys Thr Leu Asp Leu
            355   360   365

Ile Ala Thr Pro Ser Glu Arg Gly Thr Arg Gly Phe Gly Ser Thr Asp
            370   375   380

Lys Glu Thr Asn Asp Val Asp Phe Leu Leu Lys His
385   390   395

<210> 75

<211> 1083
<212> PRT
<213> Varicella zoster

<400> 75

Met Asp Lys Ser Ser Lys Pro Thr Ile Arg Leu Leu Phe Ala Thr Lys
1   5   10   15

Gly Cys Ala Ile Ser His Ser Leu Leu Leu Leu Thr Gly Gln Ile Ser
                20   25   30

Thr Glu Pro Leu Tyr Val Val Ser Tyr Thr Trp Thr Pro Asp Leu Asp
            35   40   45

Asp Val Phe Val Lys Asn Gly Arg Glu Glu Ile Thr Gln Val Ile Pro
        50   55   60

Thr Lys Arg Pro Arg Glu Val Thr Glu Asn Asp Glu Glu Asn Gln Ile
65   70   75   80

Met His Leu Phe Cys Ser Arg Asp Val Asn Val Ile Phe Tyr Leu Ile
                    85   90   95

Gly Gly Phe Ser Thr Gly Asp Val Arg Ser Arg Val Trp Pro Ile Phe
                100   105   110

Phe Cys Cys Phe Lys Thr Gln Thr Asp Phe Lys Ala Leu Tyr Lys Ala
            115   120   125

Leu Trp Tyr Gly Ala Pro Leu Asn Pro His Ile Ile Ser Asp Thr Leu
        130   135   140

Cys Ile Ser Glu Thr Phe Asp Ile His Ser Glu Val Ile Gln Thr Leu
145   150   155   160

Met Val Thr Thr His His Leu Asn Arg Lys Gly Leu Ser Asp Asn Gly
                165   170   175

Leu Cys Ile Thr Glu Ala Thr Leu Cys Lys Leu Val Lys Lys Ser Val
                180   185   190

Gly Arg Gln Glu Leu Thr Ser Leu Tyr Ala His Tyr Glu Arg Gln Val
                195   200   205

Leu Ala Ala Tyr Arg Arg Leu Tyr Trp Gly Tyr Gly Cys Ser Pro Phe
        210   215   220

Trp Tyr Ile Val Arg Phe Gly Pro Ser Glu Lys Thr Leu Val Leu Ala
225   230   235   240

Thr Arg Tyr Tyr Leu Leu Gln Thr Asp Thr Ser Tyr Asn Thr Leu Glu
                245   250   255

Thr Pro Leu Tyr Asp Leu Gln Ala Ile Lys Asp Leu Phe Leu Thr Tyr
                260   265   270

Gln Val Pro Ala Leu Pro Asn Cys Ser Gly Tyr Asn Ile Ser Asp Leu
                275   280   285

Leu Ser Phe Asp Lys Leu Ser Met Phe Cys Cys Ser Ser Thr Tyr Thr
                290   295   300

Arg Gly Leu Thr Ala Lys Asn Ala Leu Ser Tyr Ile Leu Gln Arg Ile
305   310   315   320

His Thr Asp Thr Thr Glu Ile His Ala Val Ser Glu Tyr Ile Thr Asn
                325   330   335

Asp Arg Lys Gly Leu Lys Val Pro Asp Arg Glu Phe Val Asp Tyr Ile
                340   345   350

Tyr Leu Ala His Phe Glu Cys Phe Asn Arg Lys Gln Ile Ala Asp His
                355   360   365

Leu Gln Ala Val Thr Tyr Ser Asp Phe Val Asn Lys Pro Val Leu Leu
                370   375   380

Lys Ser Ser Asn Leu Gly Lys Arg Ala Thr Ala Asn Phe Phe Asn His
385   390   395   400

Val Arg Ser Arg Leu Asn Met Arg Asp Tyr Ile Lys Lys Asn Val Ile
                405   410   415

Cys Asp Val Thr Glu Leu Gly Pro Glu Ile Gly His Lys Tyr Thr Ile
                420   425   430

Thr Lys Thr Tyr Thr Leu Ser Leu Thr Tyr Ala Ala Lys Pro Ser Lys
                435   440   445

Phe Ile Gly Val Cys Asp Leu Ala Thr Thr Leu Thr Arg Arg Val Glu
450   455   460

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Asn Ile Glu Lys Gln Phe Ser Pro Tyr Gly Trp Ser Ser Thr Ile Pro
465                 470             475                 480


Ser Asn Pro Pro Gly Phe Asp Glu Leu Ser Asn Phe Glu Asp Ser Gly
                485             490                 495


Val Ser Ala Glu Ala Leu Arg Ala Ala Asn Phe Ala Asn Asp Thr Pro
            500             505             510


Asn Gln Ser Gly Arg Thr Gly Phe Asp Thr Ser Pro Gly Ile Thr Lys
            515             520             525


Leu Leu Leu Phe Phe Ser Ala Ala Thr Gly Ile Ala Thr His Asp Val
            530             535             540


Ser Ile Leu Ser Tyr Lys Thr Pro Leu Glu Ala Leu Ile Gly His Ser
545                 550             555                 560


Glu Val Thr Gly Pro Met Pro Val Tyr Arg Val Ala Leu Pro His Gly
                565             570             575


Ala Gln Ala Phe Ala Val Ile Ala Asn Asp Thr Trp Ser Ser Ile Thr
            580             585             590


Asn Arg Tyr Thr Leu Pro His Glu Ala Arg Leu Ile Ala Glu Asp Leu
            595             600             605


Lys Gln Ile Asn Pro Cys Asn Phe Val Ala Ala Ser Leu Arg Asp Met
610                 615             620


Gln Leu Thr Leu Leu Leu Ser Thr Ser Val Lys Asn Val Ser Lys Ile
625                 630             635                 640


Ser Ser Asn Ile Pro Lys Asp Gln Leu Tyr Ile Asn Arg Asn Glu Leu
                645             650             655


Phe Asn Thr Asn Leu Ile Ile Thr Asn Leu Ile Leu Asp Val Asp Phe
            660             665             670


His Ile Arg Lys Pro Ile Pro Leu Gly Ile Leu His Ala Gly Met Arg
            675             680             685


Ala Phe Arg His Gly Ile Leu Thr Ala Met Gln Leu Leu Phe Pro Lys
690                 695             700
```

Ala Val Val Asn Pro Asn Lys Asp Pro Cys Tyr Phe Tyr Lys Thr Ala
705   710   715   720

Cys Pro Glu Pro Thr Val Glu Val Leu Asp Asp Asp Asn Leu Leu Asp
                725   730   735

Ile Thr Ser His Ser Asp Ile Asp Phe Tyr Ile Glu Asn Gly Glu Leu
              740   745   750

Tyr Thr Cys Val Glu Glu Asn Tyr Thr Glu Asp Val Trp Phe Phe Asp
        755   760   765

Thr Gln Thr Thr Ser Glu Val His Thr His Ala Asp Val Ser Asn Asn
        770   775   780

Glu Asn Leu His Glu Thr Leu Pro Cys Asn Cys Lys Glu Lys Ile Gly
785   790   795   800

Phe Arg Val Cys Val Pro Ile Pro Asn Pro Tyr Ala Leu Val Gly Ser
              805   810   815

Ser Thr Leu Lys Gly Phe Ala Gln Ile Leu Gln Gln Ala Val Leu Leu
              820   825   830

Glu Arg Glu Phe Val Glu Tyr Ile Gly Pro Tyr Leu Arg Asp Phe Ser
        835   840   845

Phe Ile Asp Thr Gly Val Tyr Ser His Gly His Ser Leu Arg Leu Pro
    850   855   860

Phe Phe Ser Lys Val Thr Thr Thr Gly Thr Ala Val Gly Gln Leu Leu
865   870   875   880

Pro Phe Tyr Val Val Pro Glu Gln Cys Ile Asp Ile Leu Ala Phe Val
              885   890   895

Thr Ser His Arg Asn Pro Ala Asn Phe His Phe His Ser Arg Pro Gln
        900   905   910

Ser Asn Val Pro Val Gln Phe Ile Leu His Asn Leu Gly Gly Glu Tyr
        915   920   925

Ala Glu Phe Phe Glu Arg Lys Val Ala Arg Asn Lys Gln Ile Phe Ser
930   935   940

Ser Pro Gln Ile Ser Leu Thr Lys Ala Leu Lys Glu Arg Gly Val Thr
945   950   955   960

Cys Leu Asp Ala Phe Thr Leu Glu Ala Phe Val Asp Ser Thr Ile Leu
                965   970   975

Glu Ser Ile Val Glu His Ile Ala Val His Phe Pro Gly Arg Asp Arg
            980   985   990

Glu Tyr Thr Leu Thr Ser Ser Lys Cys Ile Ala Ile Lys Arg Asp Trp
        995   1000   1005

Val Leu Phe Gln Leu Ile Cys Gly Thr Lys Gly Phe Thr Cys Leu
    1010   1015   1020

Arg Tyr Pro His Arg Gly Gly Arg Thr Ala Pro Arg Thr Phe Val
    1025   1030   1035

Ser Leu Arg Val Asp His His Asn Arg Leu Cys Ile Ser Leu Ala
    1040   1045   1050

Gln Gln Cys Phe Ala Thr Lys Cys Asp Ser Asn Arg Met His Thr
    1055   1060   1065

Ile Phe Thr Leu Glu Val Pro Asn Tyr Pro Asn Leu Thr Ser Ser
    1070   1075   1080

<210>   76
<211>   340
<212>   PRT
<213>   Varicella zoster

<400>   76

Met Gln Ala Leu Gly Ile Lys Thr Glu His Phe Ile Ile Met Cys Leu
1   5   10   15

Leu Ser Gly His Ala Val Phe Thr Leu Trp Tyr Thr Ala Arg Val Lys
            20   25   30

Phe Glu His Glu Cys Val Tyr Ala Thr Thr Val Ile Asn Gly Gly Pro
        35   40   45

Val Val Trp Gly Ser Tyr Asn Asn Ser Leu Ile Tyr Val Thr Phe Val
    50   55   60

Asn His Ser Thr Phe Leu Asp Gly Leu Ser Gly Tyr Asp Tyr Ser Cys
65   70   75   80

Arg Glu Asn Leu Leu Ser Gly Asp Thr Met Val Lys Thr Ala Ile Ser
                    85   90   95

Thr Pro Leu His Asp Lys Ile Arg Ile Val Leu Gly Thr Arg Asn Cys
              100   105   110

His Ala Tyr Phe Trp Cys Val Gln Leu Lys Met Ile Phe Phe Ala Trp
              115   120   125

Phe Val Tyr Gly Met Tyr Leu Gln Phe Arg Arg Ile Arg Arg Met Phe
              130   135   140

Gly Pro Phe Arg Ser Ser Cys Glu Leu Ile Ser Pro Thr Ser Tyr Ser
145   150   155   160

Leu Asn Tyr Val Thr Arg Val Ile Ser Asn Ile Leu Leu Gly Tyr Pro
                    165   170   175

Tyr Thr Lys Leu Ala Arg Leu Leu Cys Asp Val Ser Met Arg Arg Asp
              180   185   190

Gly Met Ser Lys Val Phe Asn Ala Asp Pro Ile Ser Phe Leu Tyr Met
              195   200   205

His Lys Gly Val Thr Leu Leu Met Leu Leu Glu Val Ile Ala His Ile
              210   215   220

Ser Ser Gly Cys Ile Val Leu Leu Thr Leu Gly Val Ala Tyr Thr Pro
225   230   235   240

Cys Ala Leu Leu Tyr Pro Thr Tyr Ile Arg Ile Leu Ala Trp Val Val
                    245   250   255

Val Cys Thr Leu Ala Ile Val Glu Leu Ile Ser Tyr Val Arg Pro Lys
              260   265   270

Pro Thr Lys Asp Asn His Leu Asn His Ile Asn Thr Gly Gly Ile Arg
              275   280   285

Gly Ile Cys Thr Thr Cys Cys Ala Thr Val Met Ser Gly Leu Ala Ile
              290   295   300

Lys Cys Phe Tyr Ile Val Ile Phe Ala Ile Ala Val Val Ile Phe Met
305   310   315   320

His Tyr Glu Gln Arg Val Gln Val Ser Leu Phe Gly Glu Ser Glu Asn
                325   330   335

Ser Gln Lys His
            340

<210> 77
<211> 452
<212> PRT
<213> Varicella zoster

<400> 77

Met Ala Ser Ala Ser Ile Pro Thr Asp Pro Asp Val Ser Thr Ile Cys
1   5   10   15

Glu Asp Phe Met Asn Leu Leu Pro Asp Glu Pro Ser Asp Asp Phe Ala
                20   25   30

Leu Glu Val Thr Asp Trp Ala Asn Asp Glu Ala Ile Gly Ser Thr Pro
                35   40   45

Gly Glu Asp Ser Thr Thr Ser Arg Thr Val Tyr Val Glu Arg Thr Ala
    50   55   60

Asp Thr Ala Tyr Asn Pro Arg Tyr Ser Lys Arg Arg His Gly Arg Arg
65   70   75   80

Glu Ser Tyr His His Asn Arg Pro Lys Thr Leu Val Val Val Leu Pro
                85   90   95

Asp Ser Asn His His Gly Gly Arg Asp Val Glu Thr Gly Tyr Ala Arg
                100   105   110

Ile Glu Arg Gly His Arg Arg Ser Ser Arg Ser Tyr Asn Thr Gln Ser
                115   120   125

Ser Arg Lys His Arg Asp Arg Ser Leu Ser Asn Arg Arg Arg Arg Pro
    130   135   140

Thr Thr Pro Pro Ala Met Thr Thr Gly Glu Arg Asn Asp Gln Thr His
145   150   155   160

Asp Glu Ser Tyr Arg Leu Arg Phe Ser Lys Arg Asp Ala Arg Arg Glu
            165   170   175

Arg Ile Arg Lys Glu Tyr Asp Ile Pro Val Asp Arg Ile Thr Gly Arg
            180   185   190

Ala Ile Glu Val Val Ser Thr Ala Gly Ala Ser Val Thr Ile Asp Ser
            195   200   205

Val Arg His Leu Asp Glu Thr Ile Glu Lys Leu Val Val Arg Tyr Ala
            210   215   220

Thr Ile Gln Glu Gly Asp Ser Trp Ala Ser Gly Gly Cys Phe Pro Gly
225   230   235   240

Ile Lys Gln Asn Thr Ser Trp Pro Glu Leu Met Leu Tyr Gly His Glu
                        245   250   255

Leu Tyr Arg Thr Phe Glu Ser Tyr Lys Met Asp Ser Arg Ile Ala Arg
            260   265   270

Ala Leu Arg Glu Arg Val Ile Arg Gly Glu Ser Leu Ile Glu Ala Leu
            275   280   285

Glu Ser Ala Asp Glu Leu Leu Thr Trp Ile Lys Met Leu Ala Ala Lys
            290   295   300

Asn Leu Pro Ile Tyr Thr Asn Asn Pro Ile Val Ala Thr Ser Lys Ser
305   310   315   320

Leu Leu Glu Asn Leu Lys Leu Lys Leu Gly Pro Phe Val Arg Cys Leu
                        325   330   335

Leu Leu Asn Arg Asp Asn Asp Leu Gly Ser Arg Thr Leu Pro Glu Leu
            340   345   350

Leu Arg Gln Gln Arg Phe Ser Asp Ile Thr Cys Ile Thr Thr Tyr Met
            355   360   365

Phe Val Met Ile Ala Arg Ile Ala Asn Ile Val Val Arg Gly Ser Lys
370   375   380

Phe Val Glu Tyr Asp Asp Ile Ser Cys Asn Val Gln Val Leu Gln Glu
385   390   395   400

Tyr Thr Pro Gly Ser Cys Leu Ala Gly Val Leu Glu Ala Leu Ile Thr
            405   410   415

His Gln Arg Glu Cys Gly Arg Val Glu Cys Thr Leu Ser Thr Trp Ala
            420   425   430

Gly His Leu Ser Asp Ala Arg Pro Tyr Gly Lys Tyr Phe Lys Cys Ser
            435   440   445

Thr Phe Asn Cys
    450

<210> 78
<211> 179
<212> PRT
<213> Varicella zoster

<400> 78

Met Asp Thr Thr Gly Ala Ser Glu Ser Ser Gln Pro Ile Arg Val Asn
1   5   10   15

Leu Lys Pro Asp Pro Leu Ala Ser Phe Thr Gln Val Ile Pro Pro Leu
            20   25   30

Ala Leu Glu Thr Thr Trp Thr Cys Pro Ala Asn Ser His Ala Pro Thr
            35   40   45

Pro Ser Pro Leu Tyr Gly Val Lys Arg Leu Cys Ala Leu Arg Ala Thr
    50   55   60

Cys Gly Arg Ala Asp Asp Leu His Ala Phe Leu Ile Gly Leu Gly Arg
65   70   75   80

Arg Asp Lys Pro Ser Glu Ser Pro Met Tyr Val Asp Leu Gln Pro Phe
            85   90   95

Cys Ser Leu Leu Asn Ser Gln Arg Leu Leu Pro Glu Met Ala Asn Tyr
            100   105   110

Asn Thr Leu Cys Asp Ala Pro Phe Ser Ala Ala Thr Gln Gln Met Met
            115   120   125

Leu Glu Ser Gly Gln Leu Gly Val His Leu Ala Ala Ile Gly Tyr His
            130   135   140

Cys His Cys Lys Ser Pro Phe Ser Ala Glu Cys Trp Thr Gly Ala Ser

Glu Ala Tyr Asp His Val Val Cys Gly Gly Lys Ala Arg Ala Ala Val
                165   170   175

Gly Gly Leu

<210> 79
<211> 108
<212> PRT
<213> Varicella zoster

<400> 79

Met Ser Arg Val Ser Glu Tyr Gly Val Pro Glu Gly Val Arg Glu Ser
1   5   10   15

Asp Ser Asp Thr Asp Ser Val Phe Met Tyr Gln His Thr Glu Leu Met
                20   25   30

Gln Asn Asn Ala Ser Pro Leu Val Val Gln Thr Arg Pro Pro Ala Val
            35   40   45

Leu Ile Pro Leu Val Asp Val Pro Arg Pro Arg Ser Arg Arg Lys Ala
    50   55   60

Ser Ala Gln Leu Lys Met Gln Met Asp Arg Leu Cys Asn Val Leu Gly
65   70   75   80

Val Val Leu Gln Met Ala Thr Leu Ala Leu Val Thr Tyr Ile Ala Phe
                85   90   95

Val Val His Thr Arg Ala Thr Ser Cys Lys Arg Glu
            100   105

<210> 80
<211> 5743
<212> DNA
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<220>
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<400> 80

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atg tca ttg ata atg ttt ggt cgt acg ctt ggt gaa gaa tct gta aga        48
Met Ser Leu Ile Met Phe Gly Arg Thr Leu Gly Glu Glu Ser Val Arg
1               5                   10                  15

tat ttt gaa cgt cta aag cgt cgt agg gat gaa cgc ttt ggg acg ttg        96
Tyr Phe Glu Arg Leu Lys Arg Arg Arg Asp Glu Arg Phe Gly Thr Leu
                20                  25                  30

gag tcc cct acc ccg tgt tcc acg cgg caa ggg tct ctg gga aac gca       144
Glu Ser Pro Thr Pro Cys Ser Thr Arg Gln Gly Ser Leu Gly Asn Ala
            35                  40                  45

acc caa atc ccg ttt ctg aat ttt gct ata gat gta acc cga cgt cat       192
Thr Gln Ile Pro Phe Leu Asn Phe Ala Ile Asp Val Thr Arg Arg His
        50                  55                  60

cag gcc gtt att ccc gga att gga acg ctt cac aac tgt tgt gaa tat       240
Gln Ala Val Ile Pro Gly Ile Gly Thr Leu His Asn Cys Cys Glu Tyr
65                  70                  75                  80

att cca ctg ttc tcg gct act gct cga cgg gca atg ttt ggc gcg ttt       288
Ile Pro Leu Phe Ser Ala Thr Ala Arg Arg Ala Met Phe Gly Ala Phe
                85                  90                  95

cta tcg tca aca ggg tac aac tgt acc ccc aat gta gtt ttg aaa cca       336
Leu Ser Ser Thr Gly Tyr Asn Cys Thr Pro Asn Val Val Leu Lys Pro
                100                 105                 110

tgg cga tat tcg gta aat gca aac gta agc cct gaa tta aaa aag gct       384
Trp Arg Tyr Ser Val Asn Ala Asn Val Ser Pro Glu Leu Lys Lys Ala
            115                 120                 125

gtc agt agt gta cag ttt tat gaa tat tca ccg gaa gaa gca gca cct       432
Val Ser Ser Val Gln Phe Tyr Glu Tyr Ser Pro Glu Glu Ala Ala Pro
    130                 135                 140

cat cga aat gcg tat agc ggt gtt atg aac aca ttt cgc gcg ttt tct       480
His Arg Asn Ala Tyr Ser Gly Val Met Asn Thr Phe Arg Ala Phe Ser
145                 150                 155                 160

ctg tcg gat agt ttc tgt cag ttg tct acc ttt aca caa cgg ttt tcg       528
Leu Ser Asp Ser Phe Cys Gln Leu Ser Thr Phe Thr Gln Arg Phe Ser
                165                 170                 175

tac ctt gtg gaa aca tct ttt gag agt att gaa gag tgt gga agt cat       576
Tyr Leu Val Glu Thr Ser Phe Glu Ser Ile Glu Glu Cys Gly Ser His
                180                 185                 190

ggc aaa cgc gca aag gtt gac gtt cca atc tat ggc aga tat aag ggg       624
Gly Lys Arg Ala Lys Val Asp Val Pro Ile Tyr Gly Arg Tyr Lys Gly
            195                 200                 205

acg ttg gaa ctg ttt caa aaa atg atc ctc atg cac acc acg cat ttt       672
Thr Leu Glu Leu Phe Gln Lys Met Ile Leu Met His Thr Thr His Phe
    210                 215                 220

att tca tcg gtg cta ttg ggc gat cat gcc gac aga gtt gac tgc ttt       720
Ile Ser Ser Val Leu Leu Gly Asp His Ala Asp Arg Val Asp Cys Phe
225                 230                 235                 240
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ctg cgt aca gtg ttt aac acg cca agt gtt tct gac agt gtt tta gaa        768
Leu Arg Thr Val Phe Asn Thr Pro Ser Val Ser Asp Ser Val Leu Glu
            245             250             255

cac ttc aaa caa aaa tca act gtg ttt ttg gta cca cgt aga cat ggg        816
His Phe Lys Gln Lys Ser Thr Val Phe Leu Val Pro Arg Arg His Gly
            260             265             270

aaa aca tgg ttt ctt gta cca tta ata gct tta gta atg gcc acg ttt        864
Lys Thr Trp Phe Leu Val Pro Leu Ile Ala Leu Val Met Ala Thr Phe
            275             280             285

aga gga att aaa gtg ggt tat acg gct cat ata cgc aaa gca acg gaa        912
Arg Gly Ile Lys Val Gly Tyr Thr Ala His Ile Arg Lys Ala Thr Glu
290             295             300

ccc gtg ttt gag ggt atc aag tct cgc ctg gaa cag tgg ttt ggg gca        960
Pro Val Phe Glu Gly Ile Lys Ser Arg Leu Glu Gln Trp Phe Gly Ala
305             310             315             320

aat tac gtg gat cat gta aaa ggc gaa tct att acg ttt tca ttt acc        1008
Asn Tyr Val Asp His Val Lys Gly Glu Ser Ile Thr Phe Ser Phe Thr
            325             330             335

gac ggg tct tac agc aca gcg gtg ttc gcg tca agt cac aac aca aac        1056
Asp Gly Ser Tyr Ser Thr Ala Val Phe Ala Ser Ser His Asn Thr Asn
            340             345             350

gtgagtgttt tataaattta acctttaata tattactgta aatgttgaca tatacctttc      1116

cacaacggcg gttgagttaa ggtatactag gtggttgtag gttccggttc acccgataat      1176

ctttgtgtct cggggaagca aattcgctga agcagaccac agccgttaat aatagcccgg      1236

cttaatgttt ctccaaacat ataaagctgc cacccagatg aatttactgg tacagagaga      1296

ccactggcgt tggttccgc tataacgtcg ccaagatttg cggtaatgcg aggattttta       1356

gtactcgtaa ttcgaatgca ggtggtgaca tctacaaaaa gaacctgcgt ggcgccaatg      1416

tctacctcca cttttaattc ccgctgaccg gccttctcc acatacacgg agcccaacac       1476

acacaacctt ccgcatgatt tgtgacatgg ggtaacgcat acagtgcccc cacgtgaact      1536

ctatgattac attcatcaca tccgtccgca tggctgagga gtcgatttaa tacagagcca      1596

agtatccgag catgccatcc ggcgggacat agccctatta aattaggttc catagccagt      1656

acatataaac gccttcgttc gtctgaccac cacactcccg gagaaataac tttacatgcg      1716

tatggatttt tcggaagccg cggggggttgt aagtagttgc ttaagtttgg cgttggtgta     1776

agatctgcgg gggtgggatc tgctcgagga tccggaatag atgttggaag ggggtacgcg      1836

atcgggttct taaacgttgc tccaaaaaca tggtctatgt tttcaaccgg ataaattctt      1896

aaagtcgccg tcattgcgta cgagacctcg taattaaaat ttacaattac atgaaaagtc      1956

ttcggaggta agttcatctg acgtgggcgc gtgatgtaaa ttgtggctac aacaacggca      2016
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atattagtag tatccgtttg aaggggata aacggagcga tccttaaagt tataaaagca    2076

gttgatcgca ttattttcac ccggggatcg gtcaggatgg acttccataa tcccatatcc    2136

agcgttaatg catcgcagag tctctgaact gcctcggggg ttaatttgcg cgctgcaccc    2196

gtagcggtgt acagcggaaa tatgcgttgt aattccatga gcagaaaaac agtctagcgg    2256

attgccgccc gggtacttgt gggtttaatg ccacccaccc ggttattttta tattttaaga    2316

gggggtggaa acgggagaaa tgacgtaaaa ttacatatga agagattctg gtgttatgtt    2376

tttatagtga cactaattta tttatggggg ttgggaatag agaagcagaa tctgtctaga    2436

ataggtccga ttaacgatgc aggtagtgct gcctgtaggg tatcggtaat acaaaaacat    2496

gccgcaaatc ccccggtaa aactaaaatg gattgtaatt gctggttaaa tcctagacaa    2556

atgtacgcgt aacattgacc gggtaaatac ttagaacaaa ttccaatatc aacaatatcc    2616

gcgctgcgta taaatttacc cctcagttgt gtggaattac caataccaac cttttctaag    2676

gctacgggaa cggggacctt ggaaagctta agtatttccc ctcctgaatt ataatagtca    2736

aataaatata tagaacgatt acctaaccag catgggaagg aagcgtgaag gtagggtata    2796

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aaggagctgt tataaaacgc atccattgac atttccgtta acaccgaaac tatagtctga    2916

atcaggtctg gtgtgcgggc tacaatttca tcaataaccg tttgggaaga atctgcaata    2976

tcatattcca tgagttgttg tagagtcggg ttcgtttgta actccgttat aagaccttgg    3036

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ttgtccccat ttgacgtgtg tgattcaccc atggctgcca ccatatgctc tgcgtatatt      3876

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ataatacaaa tatcacggtg cttgcggttt ccagtattta ttcgtatcgc tacaacgtta      4056

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gaattatgcg tggccgaaaa aacgtgtgaa acaaatggtt ccgtttttgg tattaagaga      4176

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cctgtagcat gatatcttgt ttgtacttca accttgaagc gttgtccggg tttctttaaa      4296

atcagtaatg cgggatctat tccggccgca ataagccccg cgttaggtat cacaacgtgt      4356

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gcttccatta tacaccggat atggttgtac tggaaaaaaa aaagaaatat gtacgtattc      4476

aaacattttt tacgtacgtg gtatttaagg atacatttaa actttggtgg ggtaactata      4536

tatctttcta tcgttccag ggt atc cga ggt caa gat ttt aat ctt ctg ttt      4588
                      Gly Ile Arg Gly Gln Asp Phe Asn Leu Leu Phe
                          355                 360

gtg gat gaa gct aat ttt att cga cct gat gct gta caa act ata gtc      4636
Val Asp Glu Ala Asn Phe Ile Arg Pro Asp Ala Val Gln Thr Ile Val
 365                 370                 375

gga ttt tta aat caa acc aat tgt aaa att att ttt gtt tca tca aca      4684
Gly Phe Leu Asn Gln Thr Asn Cys Lys Ile Ile Phe Val Ser Ser Thr
380                 385                 390                 395

aat acc gga aaa gca agt aca agt ttt ttg tat aac tta cgt gga tcg      4732
Asn Thr Gly Lys Ala Ser Thr Ser Phe Leu Tyr Asn Leu Arg Gly Ser
                400                 405                 410

tcg gat cag ttg tta aac gtt gtt aca tat gta tgc gac gat cac atg      4780
Ser Asp Gln Leu Leu Asn Val Val Thr Tyr Val Cys Asp Asp His Met
                415                 420                 425

ccg cgt gtt tta gca cat agc gat gtc aca gct tgt tcg tgt tat gta      4828
Pro Arg Val Leu Ala His Ser Asp Val Thr Ala Cys Ser Cys Tyr Val
                430                 435                 440

tta aat aag ccg gtt ttc atc aca atg gat gga gcc atg cgg cgc act      4876
Leu Asn Lys Pro Val Phe Ile Thr Met Asp Gly Ala Met Arg Arg Thr
                445                 450                 455

gca gat tta ttt atg gcc gac tcc ttc gtg cag gaa att gta ggt ggg      4924
Ala Asp Leu Phe Met Ala Asp Ser Phe Val Gln Glu Ile Val Gly Gly
460                 465                 470                 475

cgt aaa cag aat tct ggg ggt gtg ggg ttt gac cgg cca tta ttt aca      4972
Arg Lys Gln Asn Ser Gly Gly Val Gly Phe Asp Arg Pro Leu Phe Thr
                480                 485                 490
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aaa act gcc cgt gag agg ttt att tta tat cgg ccg tca acc gtt gcg        5020
Lys Thr Ala Arg Glu Arg Phe Ile Leu Tyr Arg Pro Ser Thr Val Ala
            495                 500                 505

aat tgt gct ata tta tcg tca gtg ttg tac gtt tac gta gac cct gca        5068
Asn Cys Ala Ile Leu Ser Ser Val Leu Tyr Val Tyr Val Asp Pro Ala
            510                 515                 520

ttt acc tca aat aca cga gcg tct ggt act ggt gta gcg att gtt ggt        5116
Phe Thr Ser Asn Thr Arg Ala Ser Gly Thr Gly Val Ala Ile Val Gly
            525                 530                 535

cgt tat aag tcg gat tgg att ata ttt gga ttg gag cac ttt ttt ctt        5164
Arg Tyr Lys Ser Asp Trp Ile Ile Phe Gly Leu Glu His Phe Phe Leu
540                 545                 550                 555

aga gct tta act ggc acg tct tcc agt gag ata ggg cgt tgc gtt act        5212
Arg Ala Leu Thr Gly Thr Ser Ser Ser Glu Ile Gly Arg Cys Val Thr
                560                 565                 570

caa tgc tta ggc cac ata ctc gct tta cac ccc aat aca ttt aca aac        5260
Gln Cys Leu Gly His Ile Leu Ala Leu His Pro Asn Thr Phe Thr Asn
                575                 580                 585

gta cac gtt tct ata gag gga aac agc agc cag gat tct gca gtt gcc        5308
Val His Val Ser Ile Glu Gly Asn Ser Ser Gln Asp Ser Ala Val Ala
            590                 595                 600

ata tcg ttg gct ata gca caa cag ttt gct gtc ctc gaa aag gga aac        5356
Ile Ser Leu Ala Ile Ala Gln Gln Phe Ala Val Leu Glu Lys Gly Asn
605                 610                 615

gtg cta tct tcc gct cca gtg tta ctg ttt tat cat tcc ata cct ccc        5404
Val Leu Ser Ser Ala Pro Val Leu Leu Phe Tyr His Ser Ile Pro Pro
620                 625                 630                 635

gga tgt agc gtg gcg tac cct ttt ttt tta tta caa aaa caa aaa acg        5452
Gly Cys Ser Val Ala Tyr Pro Phe Phe Leu Leu Gln Lys Gln Lys Thr
                640                 645                 650

ccg gcc gta gac tat ttt gtt aaa cga ttt aac tcc gga aat ata ata        5500
Pro Ala Val Asp Tyr Phe Val Lys Arg Phe Asn Ser Gly Asn Ile Ile
                655                 660                 665

gcc tca cag gag ctt gta tcc cta aca gta aag tta ggt gta gac ccc        5548
Ala Ser Gln Glu Leu Val Ser Leu Thr Val Lys Leu Gly Val Asp Pro
            670                 675                 680

gtg gag tat cta tgt aaa cag ttg gat aac ctg aca gag gta att aaa        5596
Val Glu Tyr Leu Cys Lys Gln Leu Asp Asn Leu Thr Glu Val Ile Lys
            685                 690                 695

ggc ggt atg ggt aat cta gac aca aaa act tac acg ggt aaa ggt acc        5644
Gly Gly Met Gly Asn Leu Asp Thr Lys Thr Tyr Thr Gly Lys Gly Thr
700                 705                 710                 715

acg gga aca atg tca gat gat ctg atg gtt gca tta att atg tcc gtg        5692
Thr Gly Thr Met Ser Asp Asp Leu Met Val Ala Leu Ile Met Ser Val
                720                 725                 730
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tat att ggc agt tca tgt ata ccg gat tcc gtg ttt atg cct att aaa      5740
Tyr Ile Gly Ser Ser Cys Ile Pro Asp Ser Val Phe Met Pro Ile Lys
            735                 740                 745

taa                                                                   5743


<210>  81
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<213>  Varicella zoster

<400>  81

Met Ser Leu Ile Met Phe Gly Arg Thr Leu Gly Glu Glu Ser Val Arg
1               5                   10                  15


Tyr Phe Glu Arg Leu Lys Arg Arg Arg Asp Glu Arg Phe Gly Thr Leu
                20                  25                  30


Glu Ser Pro Thr Pro Cys Ser Thr Arg Gln Gly Ser Leu Gly Asn Ala
            35                  40                  45


Thr Gln Ile Pro Phe Leu Asn Phe Ala Ile Asp Val Thr Arg Arg His
        50                  55                  60


Gln Ala Val Ile Pro Gly Ile Gly Thr Leu His Asn Cys Cys Glu Tyr
65                  70                  75                  80


Ile Pro Leu Phe Ser Ala Thr Ala Arg Arg Ala Met Phe Gly Ala Phe
                85                  90                  95


Leu Ser Ser Thr Gly Tyr Asn Cys Thr Pro Asn Val Val Leu Lys Pro
            100                 105                 110


Trp Arg Tyr Ser Val Asn Ala Asn Val Ser Pro Glu Leu Lys Lys Ala
            115                 120                 125


Val Ser Ser Val Gln Phe Tyr Glu Tyr Ser Pro Glu Glu Ala Ala Pro
    130                 135                 140


His Arg Asn Ala Tyr Ser Gly Val Met Asn Thr Phe Arg Ala Phe Ser
145                 150                 155                 160


Leu Ser Asp Ser Phe Cys Gln Leu Ser Thr Phe Thr Gln Arg Phe Ser
                165                 170                 175


Tyr Leu Val Glu Thr Ser Phe Glu Ser Ile Glu Glu Cys Gly Ser His
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                180                        185                        190


Gly Lys Arg Ala Lys Val Asp Val Pro Ile Tyr Gly Arg Tyr Lys Gly
        195                 200                 205


Thr Leu Glu Leu Phe Gln Lys Met Ile Leu Met His Thr Thr His Phe
    210                 215                 220


Ile Ser Ser Val Leu Leu Gly Asp His Ala Asp Arg Val Asp Cys Phe
225                 230                 235                     240


Leu Arg Thr Val Phe Asn Thr Pro Ser Val Ser Asp Ser Val Leu Glu
                245                 250                 255


His Phe Lys Gln Lys Ser Thr Val Phe Leu Val Pro Arg Arg His Gly
            260                 265                 270


Lys Thr Trp Phe Leu Val Pro Leu Ile Ala Leu Val Met Ala Thr Phe
            275                 280                 285


Arg Gly Ile Lys Val Gly Tyr Thr Ala His Ile Arg Lys Ala Thr Glu
    290                 295                 300


Pro Val Phe Glu Gly Ile Lys Ser Arg Leu Glu Gln Trp Phe Gly Ala
305                 310                 315                     320


Asn Tyr Val Asp His Val Lys Gly Glu Ser Ile Thr Phe Ser Phe Thr
                325                 330                 335


Asp Gly Ser Tyr Ser Thr Ala Val Phe Ala Ser Ser His Asn Thr Asn
                340                 345                 350


Gly Ile Arg Gly Gln Asp Phe Asn Leu Leu Phe Val Asp Glu Ala Asn
        355                 360                 365


Phe Ile Arg Pro Asp Ala Val Gln Thr Ile Val Gly Phe Leu Asn Gln
    370                 375                 380


Thr Asn Cys Lys Ile Ile Phe Val Ser Ser Thr Asn Thr Gly Lys Ala
385                 390                 395                     400


Ser Thr Ser Phe Leu Tyr Asn Leu Arg Gly Ser Ser Asp Gln Leu Leu
                405                 410                 415


Asn Val Val Thr Tyr Val Cys Asp Asp His Met Pro Arg Val Leu Ala
```

His Ser Asp Val Thr Ala Cys Ser Cys Tyr Val Leu Asn Lys Pro Val
    435   440   445

Phe Ile Thr Met Asp Gly Ala Met Arg Arg Thr Ala Asp Leu Phe Met
    450   455   460

Ala Asp Ser Phe Val Gln Glu Ile Val Gly Gly Arg Lys Gln Asn Ser
465   470   475   480

Gly Gly Val Gly Phe Asp Arg Pro Leu Phe Thr Lys Thr Ala Arg Glu
                485   490   495

Arg Phe Ile Leu Tyr Arg Pro Ser Thr Val Ala Asn Cys Ala Ile Leu
            500   505   510

Ser Ser Val Leu Tyr Val Tyr Val Asp Pro Ala Phe Thr Ser Asn Thr
        515   520   525

Arg Ala Ser Gly Thr Gly Val Ala Ile Val Gly Arg Tyr Lys Ser Asp
    530   535   540

Trp Ile Ile Phe Gly Leu Glu His Phe Phe Leu Arg Ala Leu Thr Gly
545   550   555   560

Thr Ser Ser Ser Glu Ile Gly Arg Cys Val Thr Gln Cys Leu Gly His
            565   570   575

Ile Leu Ala Leu His Pro Asn Thr Phe Thr Asn Val His Val Ser Ile
        580   585   590

Glu Gly Asn Ser Ser Gln Asp Ser Ala Val Ala Ile Ser Leu Ala Ile
        595   600   605

Ala Gln Gln Phe Ala Val Leu Glu Lys Gly Asn Val Leu Ser Ser Ala
    610   615   620

Pro Val Leu Leu Phe Tyr His Ser Ile Pro Pro Gly Cys Ser Val Ala
625   630   635   640

Tyr Pro Phe Phe Leu Leu Gln Lys Gln Lys Thr Pro Ala Val Asp Tyr
                645   650   655

Phe Val Lys Arg Phe Asn Ser Gly Asn Ile Ile Ala Ser Gln Glu Leu

```
              660                    665                    670

Val Ser Leu Thr Val Lys Leu Gly Val Asp Pro Val Glu Tyr Leu Cys
        675                680                685


Lys Gln Leu Asp Asn Leu Thr Glu Val Ile Lys Gly Gly Met Gly Asn
        690                695                700


Leu Asp Thr Lys Thr Tyr Thr Gly Lys Gly Thr Thr Gly Thr Met Ser
705                710                715                720


Asp Asp Leu Met Val Ala Leu Ile Met Ser Val Tyr Ile Gly Ser Ser
                725                730                735


Cys Ile Pro Asp Ser Val Phe Met Pro Ile Lys
                740                745


<210>  82
<211>  1308
<212>  DNA
<213>  Varicella zoster


<220>
<221>  CDS
<222>  (1)..(1308)

<400>  82
atg gga act caa aag aag ggg ccg cgt tct gaa aaa gtc tcg ccg tac        48
Met Gly Thr Gln Lys Lys Gly Pro Arg Ser Glu Lys Val Ser Pro Tyr
1                   5                   10                  15

gac acc acg aca ccc gag gtg gaa gcg tta gat cat caa atg gat acg        96
Asp Thr Thr Thr Pro Glu Val Glu Ala Leu Asp His Gln Met Asp Thr
                20                  25                  30

ctt aat tgg cga att tgg ata att cag gtg atg atg ttc act ttg ggt       144
Leu Asn Trp Arg Ile Trp Ile Ile Gln Val Met Met Phe Thr Leu Gly
            35                  40                  45

gcg gta atg ctc ctg gct acg tta att gcc gcc tct tct gaa tat acc       192
Ala Val Met Leu Leu Ala Thr Leu Ile Ala Ala Ser Ser Glu Tyr Thr
        50                  55                  60

ggg atc cct tgt ttt tat gct gcc gta gtt gat tat gag tta ttt aac       240
Gly Ile Pro Cys Phe Tyr Ala Ala Val Val Asp Tyr Glu Leu Phe Asn
65                  70                  75                  80

gcc acc cta gat ggg ggg gta tgg tcc gga aat aga ggt gga tac agc       288
Ala Thr Leu Asp Gly Gly Val Trp Ser Gly Asn Arg Gly Gly Tyr Ser
                85                  90                  95

gcc ccg gtt ttg ttt ttg gaa cca cat agc gtt gtg gca ttt act tac       336
Ala Pro Val Leu Phe Leu Glu Pro His Ser Val Val Ala Phe Thr Tyr
```

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                 100                    105                    110
tac acg gct tta acg gca atg gcc atg gcg gta tat aca ctg atc acg      384
Tyr Thr Ala Leu Thr Ala Met Ala Met Ala Val Tyr Thr Leu Ile Thr
        115             120             125

gcc gcg att ata cac cga gaa acg aaa aat caa cgt gtc cgg caa agc      432
Ala Ala Ile Ile His Arg Glu Thr Lys Asn Gln Arg Val Arg Gln Ser
        130             135             140

tcc ggt gtt gca tgg tta gtt gta gat ccc aca aca ctt ttt tgg ggt      480
Ser Gly Val Ala Trp Leu Val Val Asp Pro Thr Thr Leu Phe Trp Gly
145             150             155             160

ctt ttg tca ttg tgg tta tta aac gcc gtt gtg tta tta tta gct tac      528
Leu Leu Ser Leu Trp Leu Leu Asn Ala Val Val Leu Leu Leu Ala Tyr
                165             170             175

aag caa atc ggc gtg gct gct aca tta tat ctt gga cat ttt gcg aca      576
Lys Gln Ile Gly Val Ala Ala Thr Leu Tyr Leu Gly His Phe Ala Thr
                180             185             190

agt gta ata ttt aca acg tat ttt tgt gga cgc gga aaa ttg gac gaa      624
Ser Val Ile Phe Thr Thr Tyr Phe Cys Gly Arg Gly Lys Leu Asp Glu
                195             200             205

acg aac ata aaa gcg gtc gca aat tta cga cag cag agc gtc ttt tta      672
Thr Asn Ile Lys Ala Val Ala Asn Leu Arg Gln Gln Ser Val Phe Leu
210             215             220

tat cgc ctt gcg ggg cct acg cgc gca gtg ttc gtg aat ttg atg gct      720
Tyr Arg Leu Ala Gly Pro Thr Arg Ala Val Phe Val Asn Leu Met Ala
225             230             235             240

gcg ttg atg gcg ata tgt atc cta ttt gta tca tta atg ctg gaa ctt      768
Ala Leu Met Ala Ile Cys Ile Leu Phe Val Ser Leu Met Leu Glu Leu
                245             250             255

gtg gtg gcg aat cat cta cat acg gga ctg tgg tca tcg gtg tcc gtg      816
Val Val Ala Asn His Leu His Thr Gly Leu Trp Ser Ser Val Ser Val
                260             265             270

gcc atg tct aca ttt agt aca ttg tca gtt gta tat ctt ata gta tca      864
Ala Met Ser Thr Phe Ser Thr Leu Ser Val Val Tyr Leu Ile Val Ser
                275             280             285

gaa tta att ttg gcg cat tat ata cac gtg tta ata gga ccg tcc ctg      912
Glu Leu Ile Leu Ala His Tyr Ile His Val Leu Ile Gly Pro Ser Leu
        290             295             300

gga acg ctc gtg gcc tgt gct acg ttg gga acc gcc gcg cac tcg tat      960
Gly Thr Leu Val Ala Cys Ala Thr Leu Gly Thr Ala Ala His Ser Tyr
305             310             315             320

atg gac cga tta tat gac cct ata tcg gtt caa tct cca cgg tta att     1008
Met Asp Arg Leu Tyr Asp Pro Ile Ser Val Gln Ser Pro Arg Leu Ile
                325             330             335

ccc aca act cgg gga acc ttg gct tgc ctg gcc gtg ttt tcc gtt gtc     1056
Pro Thr Thr Arg Gly Thr Leu Ala Cys Leu Ala Val Phe Ser Val Val
```

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              340                    345                    350

atg ttg ctt ctc aga ttg atg cgt gca tat gtg tat cat cga cag aaa      1104
Met Leu Leu Leu Arg Leu Met Arg Ala Tyr Val Tyr His Arg Gln Lys
        355             360             365

cgc agt cgg ttc tac ggt gcc gta aga aga gta ccc gag cgg gta cgg      1152
Arg Ser Arg Phe Tyr Gly Ala Val Arg Arg Val Pro Glu Arg Val Arg
        370             375             380

gga tac ata cga aaa gta aaa cct gca cat aga aat tct cgc cgc aca      1200
Gly Tyr Ile Arg Lys Val Lys Pro Ala His Arg Asn Ser Arg Arg Thr
385             390             395             400

aat tac cca tca caa ggc tac ggc tac gtc tat gaa aat gac tca aca      1248
Asn Tyr Pro Ser Gln Gly Tyr Gly Tyr Val Tyr Glu Asn Asp Ser Thr
        405             410             415

tat gaa acg gac cgc gag gat gag ctg tta tac gag cga tca aac agt      1296
Tyr Glu Thr Asp Arg Glu Asp Glu Leu Leu Tyr Glu Arg Ser Asn Ser
        420             425             430

ggg tgg gag tag                                                       1308
Gly Trp Glu
        435


<210>  83
<211>  435
<212>  PRT
<213>  Varicella zoster

<400>  83

Met Gly Thr Gln Lys Lys Gly Pro Arg Ser Glu Lys Val Ser Pro Tyr
1               5                   10                  15


Asp Thr Thr Thr Pro Glu Val Glu Ala Leu Asp His Gln Met Asp Thr
            20                  25                  30


Leu Asn Trp Arg Ile Trp Ile Ile Gln Val Met Met Phe Thr Leu Gly
        35                  40                  45


Ala Val Met Leu Leu Ala Thr Leu Ile Ala Ala Ser Ser Glu Tyr Thr
    50                  55                  60


Gly Ile Pro Cys Phe Tyr Ala Ala Val Val Asp Tyr Glu Leu Phe Asn
65                  70                  75                  80


Ala Thr Leu Asp Gly Gly Val Trp Ser Gly Asn Arg Gly Gly Tyr Ser
                85                  90                  95


Ala Pro Val Leu Phe Leu Glu Pro His Ser Val Val Ala Phe Thr Tyr
                100                 105                 110
```

Tyr Thr Ala Leu Thr Ala Met Ala Met Ala Val Tyr Thr Leu Ile Thr
    115   120   125

Ala Ala Ile Ile His Arg Glu Thr Lys Asn Gln Arg Val Arg Gln Ser
    130   135   140

Ser Gly Val Ala Trp Leu Val Val Asp Pro Thr Thr Leu Phe Trp Gly
145   150   155   160

Leu Leu Ser Leu Trp Leu Leu Asn Ala Val Val Leu Leu Leu Ala Tyr
                165   170   175

Lys Gln Ile Gly Val Ala Ala Thr Leu Tyr Leu Gly His Phe Ala Thr
                180   185   190

Ser Val Ile Phe Thr Thr Tyr Phe Cys Gly Arg Gly Lys Leu Asp Glu
                195   200   205

Thr Asn Ile Lys Ala Val Ala Asn Leu Arg Gln Gln Ser Val Phe Leu
    210   215   220

Tyr Arg Leu Ala Gly Pro Thr Arg Ala Val Phe Val Asn Leu Met Ala
225   230   235   240

Ala Leu Met Ala Ile Cys Ile Leu Phe Val Ser Leu Met Leu Glu Leu
                245   250   255

Val Val Ala Asn His Leu His Thr Gly Leu Trp Ser Ser Val Ser Val
                260   265   270

Ala Met Ser Thr Phe Ser Thr Leu Ser Val Val Tyr Leu Ile Val Ser
    275   280   285

Glu Leu Ile Leu Ala His Tyr Ile His Val Leu Ile Gly Pro Ser Leu
    290   295   300

Gly Thr Leu Val Ala Cys Ala Thr Leu Gly Thr Ala Ala His Ser Tyr
305   310   315   320

Met Asp Arg Leu Tyr Asp Pro Ile Ser Val Gln Ser Pro Arg Leu Ile
                325   330   335

Pro Thr Thr Arg Gly Thr Leu Ala Cys Leu Ala Val Phe Ser Val Val
    340   345   350

```
Met Leu Leu Leu Arg Leu Met Arg Ala Tyr Val Tyr His Arg Gln Lys
    355                 360                 365

Arg Ser Arg Phe Tyr Gly Ala Val Arg Arg Val Pro Glu Arg Val Arg
    370                 375                 380

Gly Tyr Ile Arg Lys Val Lys Pro Ala His Arg Asn Ser Arg Arg Thr
385                 390                 395                 400

Asn Tyr Pro Ser Gln Gly Tyr Gly Tyr Val Tyr Glu Asn Asp Ser Thr
                405                 410                 415

Tyr Glu Thr Asp Arg Glu Asp Glu Leu Leu Tyr Glu Arg Ser Asn Ser
            420                 425                 430

Gly Trp Glu
        435


<210>  84
<211>  2310
<212>  DNA
<213>  Varicella zoster


<220>
<221>  CDS
<222>  (1)..(2310)

<400>  84
atg gcc gaa ata acg tct ctt ttt aat aac agt tcc ggt agt gaa gaa        48
Met Ala Glu Ile Thr Ser Leu Phe Asn Asn Ser Ser Gly Ser Glu Glu
1               5                   10                  15

aaa agg ata gca agt tct gtt tct att gac cag ggc ttg aat gga agt        96
Lys Arg Ile Ala Ser Ser Val Ser Ile Asp Gln Gly Leu Asn Gly Ser
                20                  25                  30

aac cca aat gac caa tac aag aac atg ttc gat ata tac tgg aat gag       144
Asn Pro Asn Asp Gln Tyr Lys Asn Met Phe Asp Ile Tyr Trp Asn Glu
            35                  40                  45

tac gcc ccg gat ata ggg ttt tgt aca ttt ccg gag gaa gat ggc tgg       192
Tyr Ala Pro Asp Ile Gly Phe Cys Thr Phe Pro Glu Glu Asp Gly Trp
        50                  55                  60

atg tta ata cac cca acc acg caa agt atg ttg ttt cga aaa atc cta       240
Met Leu Ile His Pro Thr Thr Gln Ser Met Leu Phe Arg Lys Ile Leu
65                  70                  75                  80

gcc ggt gac ttt gga tat acc gat gga caa ggc ata tat agc gct gta       288
Ala Gly Asp Phe Gly Tyr Thr Asp Gly Gln Gly Ile Tyr Ser Ala Val
                85                  90                  95
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```
cgg tct acg gaa act gta att cgc caa gtt cag gca acc gtt ttg atg        336
Arg Ser Thr Glu Thr Val Ile Arg Gln Val Gln Ala Thr Val Leu Met
            100                 105                 110

aac gcg ttg gat gca act cgg tat gag gac cta gca gca gat tgg gaa        384
Asn Ala Leu Asp Ala Thr Arg Tyr Glu Asp Leu Ala Ala Asp Trp Glu
            115                 120                 125

cac cac atc caa caa tgt aac ctg cat gcc ggg gct cta gcg gaa cgt        432
His His Ile Gln Gln Cys Asn Leu His Ala Gly Ala Leu Ala Glu Arg
        130                 135                 140

tat ggg cta tgt gga gaa tca gaa gcc gta cgg ctt gca cat cag gtt        480
Tyr Gly Leu Cys Gly Glu Ser Glu Ala Val Arg Leu Ala His Gln Val
145                 150                 155                 160

ttt gaa acc tgg cgt caa aca tta cag tca tcg tta ctt gag ttt ctg        528
Phe Glu Thr Trp Arg Gln Thr Leu Gln Ser Ser Leu Leu Glu Phe Leu
                    165                 170                 175

cgt gga ata acc ggt tgt ctc tat acc agt ggt tta aat gga agg gtc        576
Arg Gly Ile Thr Gly Cys Leu Tyr Thr Ser Gly Leu Asn Gly Arg Val
                180                 185                 190

ggt ttt gcc aaa tac gtg gac tgg ata gcc tgt gta ggt att gtg ccc        624
Gly Phe Ala Lys Tyr Val Asp Trp Ile Ala Cys Val Gly Ile Val Pro
            195                 200                 205

gtt gta aga aag gta cga tca gaa cag aat gga acc cct gca cca tta        672
Val Val Arg Lys Val Arg Ser Glu Gln Asn Gly Thr Pro Ala Pro Leu
        210                 215                 220

aat acg tat atg ggt caa gcg gca gaa ctg tcc cag atg tta aaa gtt        720
Asn Thr Tyr Met Gly Gln Ala Ala Glu Leu Ser Gln Met Leu Lys Val
225                 230                 235                 240

gcc gat gca acg ttg gcc aga gga gcg gcg gtt gtc aca agc cta gtt        768
Ala Asp Ala Thr Leu Ala Arg Gly Ala Ala Val Val Thr Ser Leu Val
                    245                 250                 255

gag tgt atg caa aat gtt gct att atg gat tat gat agg acg cgt ctt        816
Glu Cys Met Gln Asn Val Ala Ile Met Asp Tyr Asp Arg Thr Arg Leu
                260                 265                 270

tat tat aat tat aac cga aga tta att atg gca aag gat gat gta acg        864
Tyr Tyr Asn Tyr Asn Arg Arg Leu Ile Met Ala Lys Asp Asp Val Thr
            275                 280                 285

ggc atg aag gga gag tgt ttg gtc gtg tgg ccg ccc gtt gta tgt ggg        912
Gly Met Lys Gly Glu Cys Leu Val Val Trp Pro Pro Val Val Cys Gly
        290                 295                 300

gag ggt gta gta ttt gac tca ccc tta cag cgg ctt tct ggg gag gtg        960
Glu Gly Val Val Phe Asp Ser Pro Leu Gln Arg Leu Ser Gly Glu Val
305                 310                 315                 320

ttg gcc tgt tat gca tta cgt gaa cat gct cgc gtc tgc caa gtt tta       1008
Leu Ala Cys Tyr Ala Leu Arg Glu His Ala Arg Val Cys Gln Val Leu
                    325                 330                 335
```

```
aat aca gcc cct ttg cgc gtg tta ata ggt cgc cgg aat gaa gat gat        1056
Asn Thr Ala Pro Leu Arg Val Leu Ile Gly Arg Arg Asn Glu Asp Asp
        340                     345                 350

aga tct cac agc aca cgt gcg gtt gat cgt ata atg ggc gag aac gat        1104
Arg Ser His Ser Thr Arg Ala Val Asp Arg Ile Met Gly Glu Asn Asp
        355                     360                 365

aca aca cgg gct gga tcg gcc gcg tct aga ctt gta aag cta ata gtt        1152
Thr Thr Arg Ala Gly Ser Ala Ala Ser Arg Leu Val Lys Leu Ile Val
        370                 375                 380

aac tta aaa aac atg aga cat gtt gga gat att acc gaa acc gta cgt        1200
Asn Leu Lys Asn Met Arg His Val Gly Asp Ile Thr Glu Thr Val Arg
385                 390                 395                 400

tcc tat cta gaa gaa acg ggc aat cac att ctg gaa gga agt gga tcg        1248
Ser Tyr Leu Glu Glu Thr Gly Asn His Ile Leu Glu Gly Ser Gly Ser
                    405                 410                 415

gtg gac aca tca caa ccg ggg ttt ggc aag gcc aac caa tcc ttt aac        1296
Val Asp Thr Ser Gln Pro Gly Phe Gly Lys Ala Asn Gln Ser Phe Asn
                420                 425                 430

ggg ggg gca atg tcc gga aca aca aac gtt caa agt gcg ttt aaa act        1344
Gly Gly Ala Met Ser Gly Thr Thr Asn Val Gln Ser Ala Phe Lys Thr
            435                 440                 445

tcg gtg gtt aac agt atc aac ggc atg ctc gag ggt tat gtg aat aat        1392
Ser Val Val Asn Ser Ile Asn Gly Met Leu Glu Gly Tyr Val Asn Asn
        450                 455                 460

tta ttc aaa acc att gag ggt ctc aag gat gtg aac agc gat ctg acc        1440
Leu Phe Lys Thr Ile Glu Gly Leu Lys Asp Val Asn Ser Asp Leu Thr
465                 470                 475                 480

gaa agg ctc cag ttc aaa gaa gga gag ctg aaa cgg tta cgg gaa gag        1488
Glu Arg Leu Gln Phe Lys Glu Gly Glu Leu Lys Arg Leu Arg Glu Glu
                    485                 490                 495

agg gta aaa ata aag cca tct aaa ggg tca cat att aca atg gca gaa        1536
Arg Val Lys Ile Lys Pro Ser Lys Gly Ser His Ile Thr Met Ala Glu
                500                 505                 510

gaa aca cgt att gcc gat tta aat cac gag gtt ata gat ctt acc ggc        1584
Glu Thr Arg Ile Ala Asp Leu Asn His Glu Val Ile Asp Leu Thr Gly
            515                 520                 525

ata ata ggg gat gat gca tat att gcc aat agt ttt caa tct cgt tat        1632
Ile Ile Gly Asp Asp Ala Tyr Ile Ala Asn Ser Phe Gln Ser Arg Tyr
        530                 535                 540

atc ccc cct tat gga gat gat ata aaa cgt ttg tct gag cta tgg aaa        1680
Ile Pro Pro Tyr Gly Asp Asp Ile Lys Arg Leu Ser Glu Leu Trp Lys
545                 550                 555                 560

cag gaa ctt gtt cgc tgt ttt aag ctt cac cgg gta aac aat aat caa        1728
Gln Glu Leu Val Arg Cys Phe Lys Leu His Arg Val Asn Asn Asn Gln
                565                 570                 575
```

```
ggc cag gaa att tct gta tca tat tca aat gcg tca atc tca tta cta      1776
Gly Gln Glu Ile Ser Val Ser Tyr Ser Asn Ala Ser Ile Ser Leu Leu
            580             585             590

gtt gcg ccg tat ttt tca ttc ata tta cgg gcc acc cga tta gga ttc      1824
Val Ala Pro Tyr Phe Ser Phe Ile Leu Arg Ala Thr Arg Leu Gly Phe
            595             600             605

ttg gta act caa agc gag gta cat agg tca gag gaa gag tta tgc cag      1872
Leu Val Thr Gln Ser Glu Val His Arg Ser Glu Glu Glu Leu Cys Gln
            610             615             620

gct att ttt aaa aag gcg aga aca gag tcc tat tta tcc caa atc cga      1920
Ala Ile Phe Lys Lys Ala Arg Thr Glu Ser Tyr Leu Ser Gln Ile Arg
625             630             635             640

ata tta tat gaa atg cag gtt cgc gca gag gta ata aaa cgg ggc cca      1968
Ile Leu Tyr Glu Met Gln Val Arg Ala Glu Val Ile Lys Arg Gly Pro
                645             650             655

cgg aga aca cca agt cct tcc tgg ggt ttg cct gac cct aca gaa gat      2016
Arg Arg Thr Pro Ser Pro Ser Trp Gly Leu Pro Asp Pro Thr Glu Asp
                660             665             670

gac gaa aga atc ccg gaa ccc aat aaa ata aat aac caa tac atg cat      2064
Asp Glu Arg Ile Pro Glu Pro Asn Lys Ile Asn Asn Gln Tyr Met His
            675             680             685

gtt gga tat aaa aac cta tcc cat ttt atg aaa gga cac ccc cct gag      2112
Val Gly Tyr Lys Asn Leu Ser His Phe Met Lys Gly His Pro Pro Glu
690             695             700

agg tta cgg gta cac aag gta aat gca gcg gat tcg acc tta ctg gat      2160
Arg Leu Arg Val His Lys Val Asn Ala Ala Asp Ser Thr Leu Leu Asp
705             710             715             720

aaa att cga gca aac cgg agg cgc ggg gat ggc cga tgg gat gtc cgg      2208
Lys Ile Arg Ala Asn Arg Arg Arg Gly Asp Gly Arg Trp Asp Val Arg
                725             730             735

aat aaa tat acc cag cat ttt agg ttg cag cgt aac gat cga caa ctt      2256
Asn Lys Tyr Thr Gln His Phe Arg Leu Gln Arg Asn Asp Arg Gln Leu
            740             745             750

act aac acg agc cga aga ggg gtt gga tgt gag cga cgt gat cga aga      2304
Thr Asn Thr Ser Arg Arg Gly Val Gly Cys Glu Arg Arg Asp Arg Arg
            755             760             765

tct tag                                                               2310
Ser


<210>  85
<211>  769
<212>  PRT
<213>  Varicella zoster

<400>  85
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Met Ala Glu Ile Thr Ser Leu Phe Asn Asn Ser Ser Gly Ser Glu Glu
1               5                   10                  15

Lys Arg Ile Ala Ser Ser Val Ser Ile Asp Gln Gly Leu Asn Gly Ser
            20                  25                  30

Asn Pro Asn Asp Gln Tyr Lys Asn Met Phe Asp Ile Tyr Trp Asn Glu
        35                  40                  45

Tyr Ala Pro Asp Ile Gly Phe Cys Thr Phe Pro Glu Glu Asp Gly Trp
    50                  55                  60

Met Leu Ile His Pro Thr Thr Gln Ser Met Leu Phe Arg Lys Ile Leu
65                  70                  75                  80

Ala Gly Asp Phe Gly Tyr Thr Asp Gly Gln Gly Ile Tyr Ser Ala Val
                85                  90                  95

Arg Ser Thr Glu Thr Val Ile Arg Gln Val Gln Ala Thr Val Leu Met
            100                 105                 110

Asn Ala Leu Asp Ala Thr Arg Tyr Glu Asp Leu Ala Ala Asp Trp Glu
            115                 120                 125

His His Ile Gln Gln Cys Asn Leu His Ala Gly Ala Leu Ala Glu Arg
    130                 135                 140

Tyr Gly Leu Cys Gly Glu Ser Glu Ala Val Arg Leu Ala His Gln Val
145                 150                 155                 160

Phe Glu Thr Trp Arg Gln Thr Leu Gln Ser Ser Leu Leu Glu Phe Leu
            165                 170                 175

Arg Gly Ile Thr Gly Cys Leu Tyr Thr Ser Gly Leu Asn Gly Arg Val
            180                 185                 190

Gly Phe Ala Lys Tyr Val Asp Trp Ile Ala Cys Val Gly Ile Val Pro
        195                 200                 205

Val Val Arg Lys Val Arg Ser Glu Gln Asn Gly Thr Pro Ala Pro Leu
    210                 215                 220

Asn Thr Tyr Met Gly Gln Ala Ala Glu Leu Ser Gln Met Leu Lys Val
225                 230                 235                 240
```

```
Ala Asp Ala Thr Leu Ala Arg Gly Ala Ala Val Val Thr Ser Leu Val
            245                 250                 255

Glu Cys Met Gln Asn Val Ala Ile Met Asp Tyr Asp Arg Thr Arg Leu
            260                 265                 270

Tyr Tyr Asn Tyr Asn Arg Arg Leu Ile Met Ala Lys Asp Asp Val Thr
        275                 280                 285

Gly Met Lys Gly Glu Cys Leu Val Val Trp Pro Pro Val Val Cys Gly
    290                 295                 300

Glu Gly Val Val Phe Asp Ser Pro Leu Gln Arg Leu Ser Gly Glu Val
305                 310                 315                 320

Leu Ala Cys Tyr Ala Leu Arg Glu His Ala Arg Val Cys Gln Val Leu
            325                 330                 335

Asn Thr Ala Pro Leu Arg Val Leu Ile Gly Arg Arg Asn Glu Asp Asp
            340                 345                 350

Arg Ser His Ser Thr Arg Ala Val Asp Arg Ile Met Gly Glu Asn Asp
        355                 360                 365

Thr Thr Arg Ala Gly Ser Ala Ala Ser Arg Leu Val Lys Leu Ile Val
    370                 375                 380

Asn Leu Lys Asn Met Arg His Val Gly Asp Ile Thr Glu Thr Val Arg
385                 390                 395                 400

Ser Tyr Leu Glu Glu Thr Gly Asn His Ile Leu Glu Gly Ser Gly Ser
            405                 410                 415

Val Asp Thr Ser Gln Pro Gly Phe Gly Lys Ala Asn Gln Ser Phe Asn
            420                 425                 430

Gly Gly Ala Met Ser Gly Thr Thr Asn Val Gln Ser Ala Phe Lys Thr
    435                 440                 445

Ser Val Val Asn Ser Ile Asn Gly Met Leu Glu Gly Tyr Val Asn Asn
    450                 455                 460

Leu Phe Lys Thr Ile Glu Gly Leu Lys Asp Val Asn Ser Asp Leu Thr
465                 470                 475                 480
```

Glu Arg Leu Gln Phe Lys Glu Gly Glu Leu Lys Arg Leu Arg Glu Glu
                485   490   495

Arg Val Lys Ile Lys Pro Ser Lys Gly Ser His Ile Thr Met Ala Glu
                500   505   510

Glu Thr Arg Ile Ala Asp Leu Asn His Glu Val Ile Asp Leu Thr Gly
                515   520   525

Ile Ile Gly Asp Asp Ala Tyr Ile Ala Asn Ser Phe Gln Ser Arg Tyr
                530   535   540

Ile Pro Pro Tyr Gly Asp Asp Ile Lys Arg Leu Ser Glu Leu Trp Lys
545   550   555   560

Gln Glu Leu Val Arg Cys Phe Lys Leu His Arg Val Asn Asn Asn Gln
                565   570   575

Gly Gln Glu Ile Ser Val Ser Tyr Ser Asn Ala Ser Ile Ser Leu Leu
                580   585   590

Val Ala Pro Tyr Phe Ser Phe Ile Leu Arg Ala Thr Arg Leu Gly Phe
                595   600   605

Leu Val Thr Gln Ser Glu Val His Arg Ser Glu Glu Glu Leu Cys Gln
                610   615   620

Ala Ile Phe Lys Lys Ala Arg Thr Glu Ser Tyr Leu Ser Gln Ile Arg
625   630   635   640

Ile Leu Tyr Glu Met Gln Val Arg Ala Glu Val Ile Lys Arg Gly Pro
                645   650   655

Arg Arg Thr Pro Ser Pro Ser Trp Gly Leu Pro Asp Pro Thr Glu Asp
                660   665   670

Asp Glu Arg Ile Pro Glu Pro Asn Lys Ile Asn Asn Gln Tyr Met His
                675   680   685

Val Gly Tyr Lys Asn Leu Ser His Phe Met Lys Gly His Pro Pro Glu
                690   695   700

Arg Leu Arg Val His Lys Val Asn Ala Ala Asp Ser Thr Leu Leu Asp
705   710   715   720

```
Lys Ile Arg Ala Asn Arg Arg Arg Gly Asp Gly Arg Trp Asp Val Arg
            725                 730                 735

Asn Lys Tyr Thr Gln His Phe Arg Leu Gln Arg Asn Asp Arg Gln Leu
            740                 745                 750

Thr Asn Thr Ser Arg Arg Gly Val Gly Cys Glu Arg Arg Asp Arg Arg
            755                 760                 765

Ser
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<210> 86
<211> 666
<212> DNA
<213> Varicella zoster

<220>
<221> CDS
<222> (1)..(666)

<400> 86
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atg ttt tcg gag ttg cct cct tcc gta ccg acg gca ttg ctt caa tgg      48
Met Phe Ser Glu Leu Pro Pro Ser Val Pro Thr Ala Leu Leu Gln Trp
1               5                   10                  15

ggt tgg gga ttg cat cgt gga ccg tgt tcg atc cca aat ttt aaa cag      96
Gly Trp Gly Leu His Arg Gly Pro Cys Ser Ile Pro Asn Phe Lys Gln
            20                  25                  30

gta gcc agc caa cac agt gtt cag aac gat ttt aca gaa aat agc gtt     144
Val Ala Ser Gln His Ser Val Gln Asn Asp Phe Thr Glu Asn Ser Val
        35                  40                  45

gat gca aat gaa aaa ttt ccg att ggg cac gcg ggc tgt att gag aaa     192
Asp Ala Asn Glu Lys Phe Pro Ile Gly His Ala Gly Cys Ile Glu Lys
        50                  55                  60

acc aaa gac gac tat gta cca ttt gat acg ttg ttc atg gta tca tct     240
Thr Lys Asp Asp Tyr Val Pro Phe Asp Thr Leu Phe Met Val Ser Ser
65                  70                  75                  80

att gac gaa ctt ggg cgg aga caa tta acc gac acc atc cgc cgc agc     288
Ile Asp Glu Leu Gly Arg Arg Gln Leu Thr Asp Thr Ile Arg Arg Ser
                85                  90                  95

ttg gtt atg aac gcc tgt gaa ata acg gtc gcg tgt acg aaa acc gca     336
Leu Val Met Asn Ala Cys Glu Ile Thr Val Ala Cys Thr Lys Thr Ala
            100                 105                 110

gcc ttt tct ggt cga ggc gtg tca cga caa aaa cac gtg acc cta tct     384
Ala Phe Ser Gly Arg Gly Val Ser Arg Gln Lys His Val Thr Leu Ser
            115                 120                 125
```

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aaa aat aaa ttc aat cca tcc agt cat aag agc ctg caa atg ttt gtg          432
Lys Asn Lys Phe Asn Pro Ser Ser His Lys Ser Leu Gln Met Phe Val
    130             135             140

ttg tgt caa aaa acc cat gca ccc cgt gtc aga aac cta ctg tac gag          480
Leu Cys Gln Lys Thr His Ala Pro Arg Val Arg Asn Leu Leu Tyr Glu
145             150             155             160

agt att cgt gca aga aga cct cgc cga tat tac acc cgc tca acg gac          528
Ser Ile Arg Ala Arg Arg Pro Arg Arg Tyr Tyr Thr Arg Ser Thr Asp
            165             170             175

gga aaa tcg cgt ccg ttg gta cca gtg ttt gtg tat gag ttt acg gct          576
Gly Lys Ser Arg Pro Leu Val Pro Val Phe Val Tyr Glu Phe Thr Ala
            180             185             190

tta gat cgt gtc ctt tta cat aag gaa aat act ttg acc gac caa cca          624
Leu Asp Arg Val Leu Leu His Lys Glu Asn Thr Leu Thr Asp Gln Pro
            195             200             205

att aat act gaa aat agc ggt cat gga cgt acg aga acg taa              666
Ile Asn Thr Glu Asn Ser Gly His Gly Arg Thr Arg Thr
    210             215             220
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<210> 87
<211> 221
<212> PRT
<213> Varicella zoster

<400> 87

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Met Phe Ser Glu Leu Pro Pro Ser Val Pro Thr Ala Leu Leu Gln Trp
1               5               10              15


Gly Trp Gly Leu His Arg Gly Pro Cys Ser Ile Pro Asn Phe Lys Gln
            20              25              30


Val Ala Ser Gln His Ser Val Gln Asn Asp Phe Thr Glu Asn Ser Val
            35              40              45


Asp Ala Asn Glu Lys Phe Pro Ile Gly His Ala Gly Cys Ile Glu Lys
    50              55              60


Thr Lys Asp Asp Tyr Val Pro Phe Asp Thr Leu Phe Met Val Ser Ser
65              70              75              80


Ile Asp Glu Leu Gly Arg Arg Gln Leu Thr Asp Thr Ile Arg Arg Ser
                85              90              95


Leu Val Met Asn Ala Cys Glu Ile Thr Val Ala Cys Thr Lys Thr Ala
            100             105             110
```

Ala Phe Ser Gly Arg Gly Val Ser Arg Gln Lys His Val Thr Leu Ser
    115   120   125

Lys Asn Lys Phe Asn Pro Ser Ser His Lys Ser Leu Gln Met Phe Val
    130   135   140

Leu Cys Gln Lys Thr His Ala Pro Arg Val Arg Asn Leu Leu Tyr Glu
145   150   155   160

Ser Ile Arg Ala Arg Arg Pro Arg Arg Tyr Tyr Thr Arg Ser Thr Asp
                165   170   175

Gly Lys Ser Arg Pro Leu Val Pro Val Phe Val Tyr Glu Phe Thr Ala
                180   185   190

Leu Asp Arg Val Leu Leu His Lys Glu Asn Thr Leu Thr Asp Gln Pro
                195   200   205

Ile Asn Thr Glu Asn Ser Gly His Gly Arg Thr Arg Thr
    210   215   220

<210>   88
<211>   480
<212>   DNA
<213>   Varicella zoster

<220>
<221>   CDS
<222>   (1)..(480)

<400>   88
atg gca tca cat aaa tgg tta ctg cag ata gtt ttt tta aaa act atc   48
Met Ala Ser His Lys Trp Leu Leu Gln Ile Val Phe Leu Lys Thr Ile
1   5   10   15

aca atc gcg tat tgt ctt cat ctc caa gac gac act ccg ttg ttt ttt   96
Thr Ile Ala Tyr Cys Leu His Leu Gln Asp Asp Thr Pro Leu Phe Phe
                20   25   30

gga gcc aaa ccg cta tcg gat gtg agt ttg att ata acg gaa ccg tgc   144
Gly Ala Lys Pro Leu Ser Asp Val Ser Leu Ile Ile Thr Glu Pro Cys
            35   40   45

gtg tca tcg gta tat gag gcg tgg gac tat gcg gca ccc ccg gta tca   192
Val Ser Ser Val Tyr Glu Ala Trp Asp Tyr Ala Ala Pro Pro Val Ser
        50   55   60

aac ctc agc gag gcg cta tcg gga atc gtg gtt aag aca aaa tgt cca   240
Asn Leu Ser Glu Ala Leu Ser Gly Ile Val Val Lys Thr Lys Cys Pro
65   70   75   80

gta ccg gaa gtt ata ctt tgg ttt aaa gac aaa caa atg gcg tac tgg   288

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Val Pro Glu Val Ile Leu Trp Phe Lys Asp Lys Gln Met Ala Tyr Trp
                85                  90                  95

aca aat cca tac gtc acc tta aag ggg ctg gca caa tct gtt ggt gaa        336
Thr Asn Pro Tyr Val Thr Leu Lys Gly Leu Ala Gln Ser Val Gly Glu
            100                 105                 110

gaa cat aaa agc ggg gac ata cgc gat gct ttg ttg gat gcc ctt tcc        384
Glu His Lys Ser Gly Asp Ile Arg Asp Ala Leu Leu Asp Ala Leu Ser
            115                 120                 125

ggt gta tgg gta gac tct act cca tct tcc aca aat atc ccg gaa aat        432
Gly Val Trp Val Asp Ser Thr Pro Ser Ser Thr Asn Ile Pro Glu Asn
    130                 135                 140

gga tgt gtc tgg gga gcc gac cgt ttg ttc caa cgc gta tgc caa tga        480
Gly Cys Val Trp Gly Ala Asp Arg Leu Phe Gln Arg Val Cys Gln
145                 150                 155


<210>  89
<211>  159
<212>  PRT
<213>  Varicella zoster

<400>  89

Met Ala Ser His Lys Trp Leu Leu Gln Ile Val Phe Leu Lys Thr Ile
1               5                   10                  15

Thr Ile Ala Tyr Cys Leu His Leu Gln Asp Asp Thr Pro Leu Phe Phe
            20                  25                  30

Gly Ala Lys Pro Leu Ser Asp Val Ser Leu Ile Ile Thr Glu Pro Cys
            35                  40                  45

Val Ser Ser Val Tyr Glu Ala Trp Asp Tyr Ala Ala Pro Pro Val Ser
    50                  55                  60

Asn Leu Ser Glu Ala Leu Ser Gly Ile Val Val Lys Thr Lys Cys Pro
65                  70                  75                  80

Val Pro Glu Val Ile Leu Trp Phe Lys Asp Lys Gln Met Ala Tyr Trp
                85                  90                  95

Thr Asn Pro Tyr Val Thr Leu Lys Gly Leu Ala Gln Ser Val Gly Glu
            100                 105                 110

Glu His Lys Ser Gly Asp Ile Arg Asp Ala Leu Leu Asp Ala Leu Ser
            115                 120                 125

Gly Val Trp Val Asp Ser Thr Pro Ser Ser Thr Asn Ile Pro Glu Asn
```

Gly Cys Val Trp Gly Ala Asp Arg Leu Phe Gln Arg Val Cys Gln
145   150   155

<210> 90
<211> 909
<212> DNA
<213> Varicella zoster

<220>
<221> CDS
<222> (1)..(909)

<400> 90
atg gct tct gta gca ggt aac gct agt aat atc tca cca cag ccc ccg   48
Met Ala Ser Val Ala Gly Asn Ala Ser Asn Ile Ser Pro Gln Pro Pro
1   5   10   15

tcg ggc gtt cca acc gga ggg gaa ttt gta ctg ata cct acc gcg tat   96
Ser Gly Val Pro Thr Gly Gly Glu Phe Val Leu Ile Pro Thr Ala Tyr
                20   25   30

tat tca cag ctg tta acc ggg cag act aaa aat ccg cag gta tca att   144
Tyr Ser Gln Leu Leu Thr Gly Gln Thr Lys Asn Pro Gln Val Ser Ile
            35   40   45

gga gct cca aat aac gga cag tat atc gtc ggg cca tat gga tct cca   192
Gly Ala Pro Asn Asn Gly Gln Tyr Ile Val Gly Pro Tyr Gly Ser Pro
        50   55   60

cac ccg cct gcc ttc cca cct aat aca ggg ggt tat ggt tgc cct ccg   240
His Pro Pro Ala Phe Pro Pro Asn Thr Gly Gly Tyr Gly Cys Pro Pro
65   70   75   80

gga cac ttc ggg gga ccg tac ggg ttt ccg gga tat cca cca ccc aat   288
Gly His Phe Gly Gly Pro Tyr Gly Phe Pro Gly Tyr Pro Pro Pro Asn
                85   90   95

cgt ttg gaa atg caa atg tcc gca ttt atg aac gca ttg gcc gcc gaa   336
Arg Leu Glu Met Gln Met Ser Ala Phe Met Asn Ala Leu Ala Ala Glu
                100   105   110

cgg ggt att gac ttg cag acc ccg tgt gta aat ttt cca gac aaa acc   384
Arg Gly Ile Asp Leu Gln Thr Pro Cys Val Asn Phe Pro Asp Lys Thr
            115   120   125

gat gtc cgt cgt cca gga aaa cgg gat ttc aag agc atg gat caa agg   432
Asp Val Arg Arg Pro Gly Lys Arg Asp Phe Lys Ser Met Asp Gln Arg
        130   135   140

gaa ttg gat tct ttt tat agt ggg gag tct caa atg gac gga gag ttt   480
Glu Leu Asp Ser Phe Tyr Ser Gly Glu Ser Gln Met Asp Gly Glu Phe
145   150   155   160

ccc tca aat ata tat ttt ccc ggt gaa cca acg tat ata acg cat cgg   528
Pro Ser Asn Ile Tyr Phe Pro Gly Glu Pro Thr Tyr Ile Thr His Arg

```
aga cgt cga gtt tct cca tca tat tgg cag agg aga cac aga gtt tct       576
Arg Arg Arg Val Ser Pro Ser Tyr Trp Gln Arg Arg His Arg Val Ser
            180             185             190

aat ggt cag cac gaa gag ctt gct ggg gtt gtg gca aaa ctg caa cag       624
Asn Gly Gln His Glu Glu Leu Ala Gly Val Val Ala Lys Leu Gln Gln
            195             200             205

gag gtt aca gag cta aaa tca caa aat ggg aca caa atg cct ttg tcg       672
Glu Val Thr Glu Leu Lys Ser Gln Asn Gly Thr Gln Met Pro Leu Ser
            210             215             220

cac cat aca aat ata cca gag ggg aca cgg gat cct cga ata tcg att       720
His His Thr Asn Ile Pro Glu Gly Thr Arg Asp Pro Arg Ile Ser Ile
225             230             235             240

tta tta aaa cag ctt caa agc gtt tcg ggt cta tgc tca tcc caa aat       768
Leu Leu Lys Gln Leu Gln Ser Val Ser Gly Leu Cys Ser Ser Gln Asn
            245             250             255

aca aca agc acc cca cat aca gat aca gtt gga caa gat gta aat gca       816
Thr Thr Ser Thr Pro His Thr Asp Thr Val Gly Gln Asp Val Asn Ala
            260             265             270

gtg gag gcg agt tcc aag gcc cct tta ata cag ggg tcc acg gca gac       864
Val Glu Ala Ser Ser Lys Ala Pro Leu Ile Gln Gly Ser Thr Ala Asp
            275             280             285

gac gcc gat atg ttt gca aat cag atg atg gtg ggg cgg tgt taa          909
Asp Ala Asp Met Phe Ala Asn Gln Met Met Val Gly Arg Cys
            290             295             300


<210>   91
<211>   302
<212>   PRT
<213>   Varicella zoster

<400>   91

Met Ala Ser Val Ala Gly Asn Ala Ser Asn Ile Ser Pro Gln Pro Pro
1               5               10              15


Ser Gly Val Pro Thr Gly Gly Glu Phe Val Leu Ile Pro Thr Ala Tyr
            20              25              30


Tyr Ser Gln Leu Leu Thr Gly Gln Thr Lys Asn Pro Gln Val Ser Ile
        35              40              45


Gly Ala Pro Asn Asn Gly Gln Tyr Ile Val Gly Pro Tyr Gly Ser Pro
    50              55              60


His Pro Pro Ala Phe Pro Pro Asn Thr Gly Gly Tyr Gly Cys Pro Pro
65              70              75              80
```

Gly His Phe Gly Gly Pro Tyr Gly Phe Pro Gly Tyr Pro Pro Asn
            85   90   95

Arg Leu Glu Met Gln Met Ser Ala Phe Met Asn Ala Leu Ala Ala Glu
            100   105   110

Arg Gly Ile Asp Leu Gln Thr Pro Cys Val Asn Phe Pro Asp Lys Thr
            115   120   125

Asp Val Arg Arg Pro Gly Lys Arg Asp Phe Lys Ser Met Asp Gln Arg
            130   135   140

Glu Leu Asp Ser Phe Tyr Ser Gly Glu Ser Gln Met Asp Gly Glu Phe
145   150   155   160

Pro Ser Asn Ile Tyr Phe Pro Gly Glu Pro Thr Tyr Ile Thr His Arg
                  165   170   175

Arg Arg Arg Val Ser Pro Ser Tyr Trp Gln Arg Arg His Arg Val Ser
            180   185   190

Asn Gly Gln His Glu Glu Leu Ala Gly Val Val Ala Lys Leu Gln Gln
            195   200   205

Glu Val Thr Glu Leu Lys Ser Gln Asn Gly Thr Gln Met Pro Leu Ser
            210   215   220

His His Thr Asn Ile Pro Glu Gly Thr Arg Asp Pro Arg Ile Ser Ile
225   230   235   240

Leu Leu Lys Gln Leu Gln Ser Val Ser Gly Leu Cys Ser Ser Gln Asn
                  245   250   255

Thr Thr Ser Thr Pro His Thr Asp Thr Val Gly Gln Asp Val Asn Ala
            260   265   270

Val Glu Ala Ser Ser Lys Ala Pro Leu Ile Gln Gly Ser Thr Ala Asp
            275   280   285

Asp Ala Asp Met Phe Ala Asn Gln Met Met Val Gly Arg Cys
290   295   300